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UNIVERSITY OF CAPE TOWN

FACULTY OF EDUCATION

**AN ANALYSIS OF PRE-SERVICE TEACHERS' HIV/AIDS
KNOWLEDGE, ATTITUDES AND SELF-EFFICACY AND THEIR
HIV/AIDS TEACHING TASKS**

A minor dissertation presented in partial fulfillment of the requirements for
the Degree of

MASTER OF EDUCATION

by

JOY ALEXANDER

SEPTEMBER 2005

DECLARATION

I hereby declare that the whole of this thesis, unless specifically indicated to the contrary in the text, is my own original work and that it has not been submitted for any degree in any other university.



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ABSTRACT

This dissertation examines the interface between pre-service teachers' HIV/AIDS knowledge, attitudes and self-efficacy, and their intentions to teach HIV/AIDS knowledge, attitudes and self-efficacy. It is located within the models of teacher education which provides a conceptual framework to analyse HIV/AIDS pre-service teacher education.

This study was conducted at the Cape Peninsula University of Technology's Faculty of Education which prepares pre-service teachers for primary school and high school teaching. It involved 68 first year foundation phase pre-service teachers in 2003. With the use of a qualitatively - based vignette probe, the pre-service teachers' intentions to teach HIV/AIDS knowledge, attitudes and self-efficacy was investigated. The same pre-service teachers' were assessed for their levels of HIV/AIDS knowledge, attitudes towards people with HIV/AIDS, and their self-efficacy with regard to reducing their own risk of HIV/AIDS infection, using a quantitatively - based comprehensive questionnaire probe.

The overall findings of the study revealed that the interface between the pre-service teacher's HIV/AIDS knowledge, attitudes and self-efficacy, and their intentions to teach HIV/AIDS knowledge, attitudes and self-efficacy was inconsistent.

The results highlighted the need for a constructivist model for HIV/AIDS pre-service teacher education which will develop pre-service teachers' HIV/AIDS subject matter expertise and their professional dexterity to critically assess and implement school - based HIV/AIDS curricula in an HIV/AIDS context of teaching.

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CHAPTER ONE:

INTRODUCTION

1.1 Background and focus of the study

South Africa is one of the countries that has been most heavily affected by HIV/AIDS. We are almost 20 years into the pandemic and there is no preventive vaccine against the HIV/AIDS disease. Currently, our only mechanism of dealing with HIV/AIDS is a balanced approach of prevention, care and antiretroviral treatment.

The HIV/AIDS pandemic is much more than a biomedical issue. It is also a socially induced phenomenon. Miller, Turner and Moses (1990) for example, propose, “the AIDS epidemic is a social as well as a biomedical phenomenon...From a social perspective, AIDS is, for the most part, a preventable disease that is inextricably rooted in the behaviours that transmit HIV”.

Interventions designed to prevent the transmission of HIV/AIDS by reducing risk behaviours seems to be the only chance of curtailing the spread of the pandemic. Kelly (2002) agrees that education interventions are fundamental in the prevention of the spread of HIV/AIDS. However, there seems to be a lack of scientific evidence about the means of effectively preventing HIV/AIDS transmission through educating people to adopt safer sex practices. Grunseit and Aggleton (1998) caution that education prevention programmes have a great degree of success in increasing knowledge but not necessarily sexual behaviour change.

In view of the fact that the fight against HIV/AIDS is so closely connected to teaching people about sexual behaviour, the education system is said to play a vital role. Undoubtedly, “education is central to the knowledge base of society, groups and individuals” (Bernstein, 1996:5). This is manifested in the ways that schools exercise their capacity to promote the knowledge, understanding, and skills to potentially enable young people to make responsible decisions about their sexual behaviour.

What is required of the teacher, amongst others, is the development of an open, honest atmosphere and a caring relationship between teacher and learner. For many teachers, this is a daunting task. Rivers and Aggleton (1999) indicate that teachers may be unsure of their role in sex education. Buczekiewicz and Carnegie (2001: 48) indicate, “translating HIV knowledge into behaviour change means a change in how teachers teach”. Skinner (2002), for example found that the youth regarded their teachers as out of touch with them. This has distanced youth from life-saving information. Stadler (2000) confirms that there are indications that South African young people prefer not to ask teachers for reproductive health advice.

How teachers understand HIV/AIDS pedagogy is of great significance to the successful delivery of HIV/AIDS messages at schools. Pedagogy is a vital variable in the sexual behaviour - change equation. Bernstein (1975: 85) defines pedagogy as “what counts as valid transmission of knowledge”. For example, if one considers a scenario where teachers teach about water conservation, the teachers’ own everyday encounters with water in their own households and communities is relevant to the teacher’s personal reality too. But teaching about an issue like water, unlike issues of sexuality and HIV/AIDS, does not enter the teacher’s deeply private, concealed and intimate realities. On the contrary, teaching about water, for example, is an issue that the teacher is likely to speak about with minimum anxiety and fear, if any at all.

Pre - service teacher education forms a vital link in eradicating many of the dilemmas that teachers confront when they teach HIV/AIDS and when they teach within the context of HIV/AIDS. In order for ¹pre - service teachers to be expertly armed in the battle against HIV/AIDS, their teacher education must ensure that they effectively construct their understanding of HIV/AIDS knowledge, HIV/AIDS attitudes, HIV/AIDS self - efficacy, and the pedagogic implications for HIV/AIDS teaching tasks.

¹ The term pre - service teacher refers to higher education students who are studying in the field of education in order to obtain a teaching qualification. This term is used synonymously with terms like, student teacher, initial teacher or prospective teacher.

Pre - service teachers, who form an integral link in the education system, as they ultimately take their place in the teaching workplace, have not been the focus of HIV/AIDS research. The focus in HIV/AIDS teaching research has largely been on teachers and HIV/AIDS. For example, the Education Labour Relations Council (ELRC) study which surveyed 21 358 teachers in more than 1 700 randomly selected schools in 2003/04 showed that nearly 13% tested positive (Macfarlane, 2005).

The focus of my study is on the pre - service teachers'

- HIV/AIDS knowledge,
- HIV/AIDS attitudes,
- their perceived HIV/AIDS self - efficacy,
- and their intentions to teach HIV/AIDS knowledge, attitudes and self - efficacy.

1.2 Statement of the problem

In a discussion, which I conducted with first year foundation phase pre - service teachers, I was alerted to their HIV/AIDS knowledge, their HIV/AIDS attitudes and their own perceived HIV/AIDS self - efficacy. This discussion came about quite tangentially during a curriculum development lecture that I conducted with these pre - service teachers in the second week of their teacher education course.

In the discussion with the pre - service teachers they responded to HIV/AIDS teaching with the following statements:

"How can I be expected to teach little ones about HIV/AIDS when I was only taught about that towards the end of high school",

and,

"We should teach children about HIV/AIDS because I wish that I had been told the truth about sexuality!"

The pre - service teachers' statements highlighted a threefold consideration of the possibilities for HIV/AIDS ²teacher education. First, the pre - service teachers'

² Teacher education refers to the pre - service teachers' education in faculties of education in universities.

HIV/AIDS knowledge, attitudes and self - efficacy play an important role in effectively delivering these messages in schools. Secondly, the pre - service teachers' understanding of HIV/AIDS teaching tasks, in terms of selecting HIV/AIDS content, is important for the effective delivery of HIV/AIDS messages in schools. Thirdly, pre - service teachers must be given sufficient opportunities to develop their understanding of HIV/AIDS knowledge, attitudes and self - efficacy, and HIV/AIDS teaching.

1.3 Research questions

My over-arching research question was:

To what extent are the pre - service teachers' HIV/AIDS knowledge, attitudes and self - efficacy consistent with the HIV/AIDS knowledge, attitudes and self - efficacy they intend to teach?

My sub-questions were:

1. When responding to the vignette, what percentage of the 68 pre - service teachers spontaneously mentioned, for their HIV/AIDS teaching tasks:
 - a) at least one aspect of knowledge about the transmission of HIV/AIDS?
 - b) at least one aspect of knowledge about HIV preventive sexual behaviour?
 - c) at least one positive attitude towards people with HIV/AIDS?
 - d) at least one aspect concerned with self - efficacy empowerment?
2. From the vignette data, what main types of unprompted HIV/AIDS knowledge responses did the 68 participants mention spontaneously?
3. From the vignette data, what main types of attitudes towards people with HIV/AIDS did these 68 participants mention spontaneously?
4. From the vignette data, what were the main types of self - efficacy spontaneously mentioned by the sample of 68 participants?

5. What unexpected or unanticipated types of responses did the vignette produce?
6. In what ways was the qualitative data response data (generated by the vignette probe) from the sample of 68 participants consistent or inconsistent with other research findings?
7. Did any evidence arise to suggest that the wording of the vignette question might be in need of rephrasing, and if so, in what ways?
8. With regard to the closed-format questionnaire, how did the 68 participants score on the knowledge items?
9. With regard to the closed-format questionnaire, how did the 68 participants score on the attitude items?
10. With regard to the closed-format questionnaire how did the 68 participants score on the self - efficacy items?

1.4 Definition of terms

The terminology in this study requires some brief clarification and definition. Bearing in mind that this study consistently focused on HIV/AIDS knowledge, attitudes and self - efficacy, the following terms need brief clarification.

1.4.1 Knowledge

The definition of Meighan (1996) served my purpose well for this study. Meighan (1996) defines knowledge as,

“...what the participants believe or think is knowledge. It embraces the members’ expectations, attitudes, myths, information and misinformation.”

1.4.2 Attitudes

For broad conceptual clarity in this study I have employed the stance of Whitrow (1999).

Whitrow (1999) views attitude as having three components:

“The affective component refers to feelings towards a social object, the behavioural component refers to “specific actions toward a social object” and the cognitive component refers to beliefs about a social object”.

1.4.3 Self - efficacy

Bandura (1977, 1986, 1997) definition of self - efficacy served my purpose well for this study:

“Self - efficacy refers to an individual's belief in his or her capacity to execute behaviors necessary to produce specific performance attainments (Bandura, 1977, 1986, 1997). Self - efficacy reflects confidence in the ability to exert control over one's own motivation, behavior, and social environment.”

1.5 Structure of thesis

This thesis has been structured in the following way:

Chapter one contextualises the study by providing a background to the current state of the HIV/AIDS pandemic in South Africa. The chapter locates the study in the field of pre - service teacher education, more specifically in HIV/AIDS teacher education. It outlines the position of pre - service teacher education in the context of the HIV/AIDS pandemic. Chapter one concludes with the purpose of the study, which is to examine pre - service teachers' HIV/AIDS knowledge, attitudes and self - efficacy and their intentions to teach these HIV/AIDS messages. A definition of the terms, knowledge, attitude and self - efficacy, is presented.

Chapter two presents my main theoretical construct, namely, learning issues in teacher education. It provides a historical overview of models of teacher education and the learning theories that underpin these models. In this chapter I briefly define behaviourist and constructivist learning theories in order to situate how teacher education has been

conceptualized. Relevant empirical studies are critically presented and analysed in this chapter.

Chapter three describes the methodology of the study. It defines the focus of the research. In this chapter my selection of a combination of qualitative and quantitative means of data collection and data analysis is explained. The research issue of validity and reliability is addressed.

Chapter four restates the research questions and presents the data obtained from 68 pre - service teachers who completed 68 open-format vignettes comprising one question and 68 closed-format questionnaires comprising 12 items. Each of the research questions is analyzed separately and common understandings which emerge, are discussed in chapter five.

Chapter five reflects on the coherent patterns and the discernable trends in the results of this study. It connects the findings of the investigation by making theoretically consistent associations between different results and by making linkages with the reported results of other research studies. In this chapter the aims of the study are related to the analysis of the data.

Chapter six presents the conclusions of this study and tries to highlight principle implications of the findings. The implications are used to make recommendations for HIV/AIDS pre - service teacher education and for future research based on these findings and experiences of the researcher. The limitations of this study, in terms of research methods, are discussed.

CHAPTER TWO:

LITERATURE REVIEW

2.1 Introduction

In this study my main theoretical construct is learning issues in teacher education. I provide a historical overview of models of teacher education and the learning theories that underpin these models. I begin by briefly defining behaviourist and constructivist learning theories in order to situate how teacher education has been conceptualized. Relevant empirical studies are critically presented and analysed.

2.2 Learning Theories

In an attempt to understand how learning theories have shaped the organization of teacher education issues, I will review learning theories. The review of learning theories will be brief since the scope of this study is not learning theories but teacher education issues, namely,

- knowledge of subject matter,
- knowledge of teaching tasks,
- and cognitive apprenticeship (Feiman-Nemser, 2001:11).

Forrester and Jantzie (2002: 1) claim that the “spectrum of learning theories consists of many approaches or ways of explaining how humans learn”. Each theory is an attempt to explain how we learn, act and behave. The particular understanding of pre - service teachers’ learning, for example, has shaped the way in which teacher education issues have been organized.

Although there are many different approaches to learning, Forrester and Jantzie (2002: 2) purport two major categories of learning theories, namely:

- behaviorism
- and constructivism.

Forrester and Jantzie (2002: 2) claim that behaviourism and constructivism are “bipolar based on their respective views of how knowledge is acquired and the intervention of tools of learning”.

2.2.1 Behaviourist Learning Theory

Theorists associated with behaviorism are, amongst others, Watson (1911), Thorndike (1912) and Skinner (1968).

Watson (1911) defined learning as “a sequence of stimulus and response actions in observable cause and effect relationships”. He emphasized the outward behavioural aspects of thought. Thorndike (1912: 5) proposed that learning is a result of habits formed through trial and error. Thorndike (1912: 37) formulated “laws of behaviour,” describing habit formation processes.

Skinner (1968) expanded on the foundation of behaviourism, established by Watson (1911) and Thorndike (1912). Skinner (1968) focussed on the theory of operant conditioning. Belkin and Gray (1977:59) explain operant conditioning as new learning that occurs “as a result of positive reinforcement, and old patterns are abandoned as a result of negative reinforcement”.

From the above it becomes evident that the concern or emphasis of behaviourism is stimulus and response actions in observable indicators that learning is taking place (Forrester and Jantzie, 2002: 4). It is this behaviourist aspect that is clearly illustrated in the way in which teacher education issues have been organized, and this will be discussed in detail in a later section of this chapter.

2.2.2 Constructivist Learning Theory

The guiding principles of constructivist learning theories include a search for meaning that focuses on primary concepts. Constructivism proposes that humans must “construct” their own knowledge through experience. Theories associated with constructivism are,

amongst others, cognitive constructivism as proposed by Piaget (1952) and social constructivism as proposed by Vygotsky (1978).

Cognitive constructivism is based on the work of Piaget (1952). Piaget's theory of cognitive development proposes that humans must "construct" their own knowledge. They build their knowledge through experience (Bhattacharya and Han, 2001: 1).

Vygotsky (1978) postulates that our cognitive development was directly related to our social development. This theory is linked to social constructivism. According to Vygotsky (1978, the culture we live in influences our social and cognitive development.

Much of Vygotsky's work grounded the theory of situated cognition. The contributors to the theory of situated cognition are Billet (1996), Greeno (1991) Lave (1988), Brown, Collins and Duguid (1989), and Lave and Wenger (1991). The theory of situated cognition recognizes the importance of social factors in learning. It encourages educators to immerse learners in an environment that approximates as closely as possible the context in which their new ideas will be applied (Schell and Black, 1997).

2.3 Learning issues in Teacher Education

The central challenge that learning theories present for teacher education is the "formidable task of translating a learning theory into a theory of teaching" (MacKinnon and Scarff-Seatter, 1997: 16). This challenge raises questions about how to organize teacher education issues, namely, pre - service teachers'

- knowledge of subject matter,
- knowledge of teaching tasks,
- and cognitive apprenticeship (Feiman-Nemser, 2004: 11).

Firstly, knowledge of subject matter for pre - service teachers refers to what pre - service teachers need to learn in terms of subject matter knowledge and skills. The rationale for this is based on the view that pre - service teachers learn the content that they will teach, because teachers need to know their subjects (Feiman-Nemser, 2001: 11).

Secondly, knowledge of teaching tasks refers to learning a set of teaching tasks which “professional teachers should be able to perform” (Feiman-Nemser, 2001: 15). The rationale for knowledge of teaching tasks is based on the view that teachers organize their knowledge around particular tasks of teaching. As Carter (1990: 12) puts it, “Teachers learn to teach as they make sense of and take on the tasks of teaching”. Knowledge of teaching tasks includes, amongst others, understanding the pedagogy involved in presenting the subject matter to learners.

The third learning issue of teacher education is the cognitive apprenticeship. The theory of situated cognition directs the issue of ‘cognitive apprenticeship’. This principle of situating pre - service teacher learning in authentic activities is aimed at facilitating the pre - service teachers’ development of their subject matter knowledge and their knowledge of teaching tasks (Collins, Brown and Newman, 1989).

2.4 Models of teacher education

Historically, there are two distinct models for teacher education. Teacher education in the 1950s to 1980s was influenced by behaviourist theories of learning. Teacher education in the 1980s to 2000s was shaped by constructivist theories of learning. These models organize pre - service teachers’ subject matter knowledge, their knowledge of teaching tasks and their cognitive apprenticeship, differently.

2.4.1 Behaviourist model of teacher education: 1950s to 1980s

In terms of organizing pre - service teachers’ knowledge of teaching tasks, teacher education of the 1950s to 1980s was approached with a behaviourist view of “core procedures of micro-teaching, training pre - service teachers to use interaction analysis or behaviour modification, demonstration and the like” (Cochran-Smith, 2004: 4). In other words, it positioned teaching tasks as the fundamental activity in teacher education.

Cognitive apprenticeship was the dominant feature of teacher education in the 1950s to 1980s. It leaned heavily on the replication of practices and activities whereby pre -

service teachers largely duplicated the practices of their teacher educators and the in-service teachers in the micro - teaching and teaching practice contexts. The historical importance of this approach to teacher education was that teachers were regarded as “technicians” (Smyth 1987: 155) who tended to “accept the practices they observe in their field of placement as the upper and outer limits of what is possible in teaching and learning” (Smyth, 1987: 21).

With regard to the pre - service teachers’ knowledge of subject matter, teacher education in the 1950s to 1980s was defined in terms of the needs that pre - service teachers expressed regarding their teaching tasks during their cognitive apprenticeship. That is, teacher education focused on technical teaching concerns that pre - service teachers were experiencing at a particular time. In light of this, teacher education in the 1950s to 1980s can be described as “survival-orientated” (Cochran-Smith, 2004: 4).

2.4.2 Constructivist model of teacher education: 1980s to 2000s

Pre - service teachers’ knowledge of subject matter in the 1980s to 2000s was defined in terms of building the pre - service teachers’ conceptual structures “through reflection and abstraction” (Von Glasersfeld, 1995:14). Fosnot (1996:10) adds that the focus of subject matter knowledge in the constructivist model of teacher education in the 1980s to 2000s was “concept development and deep understanding” of the subject matter. Teacher education in the 1980s to 2000s required pre - service teachers to be knowledgeable about subject matter and pedagogy, make decisions, construct responsive curriculum, and know how to continue learning throughout the professional lifespan (Cochran-Smith, 2004: 2).

Teacher education in the 1980s to 2000s became characterised by transformative experiences for pre - service teachers as it attempted to place knowledge of teaching tasks “within the large array of social and cultural practices that dialectically interact with educational institutions in order to move away from individualistic, vocational preparation”. This was in contrast to the array of predominantly technical activities of the behaviourist model of the 1950s to 1980s (Beyer, 1987). With regard to knowledge of

teaching tasks, teacher education in the 1980s to 2000s embraced the social, organizational and intellectual contexts from which it is believed that pre - service teachers develop knowledge, skills, and dispositions, which they use in their roles as decision-makers (Cochrane - Smith, 2004).

With regard to the pre - service teachers' cognitive apprenticeship in the 1980s to 2000s, a central tenet of the constructivist basis of teacher education was its attempt to minimise a focus on a replication of current practices and activities. Pre - service teachers were expected to critically reflect on their learning situations in their teaching practice sessions. Elbaz (1988: 46) puts forward that teacher education in the 1980s to 2000s, was influenced by Freire's (1970: 203) problem-posing education in which

“participants reflect on their situation, coming to perceive it as an objective-problematic situation and acquiring the ability to intervene in reality as they become more aware of it”

2.4.3 Analytical synopsis of the behaviourist and constructivist models of teacher education

A comparison of the teacher education models of the 1950s to 1980s, and the 1980s to 2000s, indicates that the pre - service teachers' were positioned differently in the respective teacher education models. The differences were manifested in the three learning issues of teacher education, namely pre - service teachers' knowledge of subject matter, their knowledge of teaching tasks, and their cognitive apprenticeship.

Pre - service teachers in the 1950s to 1980s were presented with a limiting version of teaching in the behaviourist model of teacher education. Cognitively, this model positioned pre - service teachers weakly because it did not include an analysis of the content or the context of teaching. It suggested that learning to teach merely entailed acquiring knowledge and learning how to teach it. It was characterized by an understanding of teaching “as an end in itself rather than a reasoned educational purpose” (Smyth, 1987: 21). Goodlad, Sober and Sirotnik (1990) concur that past approaches to

teacher education were too often centered on behaviourist identification of knowledge and skills.

The behaviourist teacher - training model of the 1950s to 1980s leaned heavily on the replication of teaching practices and teaching activities of teacher educators and tutor teachers in the schools (Hudak, 1987: 55). It was devoid of incorporating the power of the knowledge, attitudes, interests, beliefs, values and self - efficacy that individual pre - service teachers bring to their teacher education. Bullough and Gitlin (1995: 25) concur “the beginning teacher [pre - service teacher] brings to teacher education a plethora of unarticulated and unexamined beliefs about teaching and learning, and the self as teacher that require scrutiny.”

Pre - service teachers in the constructivist teacher education model of the 1980s and 2000s were positioned with the challenge of analysing their subject matter knowledge and teaching task knowledge, as key experiences, within a broader context of education. Beyer (1987: 30) proposes that a social commitment to this kind of teacher education in the 1980s to 2000s held a vision for pre - service teachers that education is “socially constructed and capable of being challenged and modified”.

The constructivist teacher education model of the 1980s to 2000s reflected on teaching and learning practice but also on the social contexts for teaching and learning. Kaufman (1996), Kroll and LaBosky (1996: 3) claim that this kind of teacher education modelled “interdisciplinary exploration, collaborative activity, and field-based opportunities for experiential learning, reflection, and self-examination”. Woods (1987: 131) concurs that teacher education should involve constructivist modes of learning which is grounded upon teacher experience.

In terms of the cognitive apprenticeship, the constructivist model of teacher education in the 1980s to 2000s recognized that learning to teach had to do with beliefs, knowledge and experiences that pre - service teachers brought into their teacher education, the ways their knowledge changed and was translated into classroom practice over time, the ways

pre - service teachers interpreted their fieldwork and the like (Cochrane - Smith, 2004). The pre - service teachers' own knowledge and attitudes during their cognitive apprenticeship were taken into account. Benyon (1985: 158) agrees with the idea of recognizing pre - service teachers' own knowledge and attitudes. As he puts it, "Behind the act of teaching there are embedded a range of attitudes, motives and emotions" Benyon (1985: 158).

2.5 Research studies on related HIV/AIDS teacher education issues

There is a dearth in the literature concerning South African pre - service teachers' HIV/AIDS knowledge, attitudes and self - efficacy and their engagement with HIV/AIDS subject matter knowledge and HIV/AIDS teaching tasks. And so, the studies reviewed here are largely international.

In addition, as a means of reviewing South African pre - service teachers' HIV/AIDS knowledge, attitudes and self - efficacy, I have considered that since pre - service teachers are, in effect, higher education students, perhaps the closest and most accurate angle would be to converge on studies of South African higher education students' HIV/AIDS knowledge, attitudes and self - efficacy.

I have directed my discussion of the reviewed studies by:

- describing the respective studies,
- discussing the research design and aim of the respective studies,
- presenting the major findings of the studies,
- and discussing the limitations of the studies, where relevant.

2.5.1 Pre - service teachers' HIV/AIDS teaching tasks

While health sciences students use their knowledge of HIV/AIDS mainly in the health sphere of HIV/AIDS with 'patients' of varying age groups, students of the arts use their knowledge of HIV/AIDS to perhaps convey messages of HIV/AIDS via the medium of

visual and performing arts to audiences of varying ages, and pre - service teachers, of professional necessity, teach HIV/AIDS to the youth. And so a review of the pre - service teachers' HIV/AIDS subject matter knowledge and HIV/AIDS teaching tasks was deemed important.

Anderson and Thorsen's (1998) study of pre - service teacher education and HIV/AIDS sought to determine the nature and extent of preparation for health education in a cohort of primary school pre - service teachers in Ontario Faculties of Education in Canada. The purpose of their study was to determine the extent to which pre - service teachers had been taught the content and methods associated with health education. Their research design included 493 surveys. These were completed in six of the ten Faculties of Education in Ontario, Canada.

Particularly striking in Anderson and Thorsen's (1998) study was that more pre - service teachers felt prepared to teach HIV/AIDS than they had been taught human sexuality, HIV/AIDS and STD prevention in their course.³ Many of the participants in this study revealed dismay at the lack of attention paid to health education. Anderson and Thorsen (1998) found that health education in pre - service teacher education is weak, and in many cases non-existent.

Anderson and Thorsen's (1988) study illuminates the "lack of congruence between the responses to 'being taught' about health education and 'feeling prepared to teach'". A limitation of their study is, however, that it does not account for why the pre - service teachers were not taught about HIV/AIDS, sexuality and STD prevention, or why they felt prepared to teach it. There are a range of speculations that we can make regarding responses to these questions, including the possibilities that the pre - service teachers' prior learning, gained either at high school, the media or in their immediate social circles of their homes and broader communities, may have provided them with some proficiency and dexterity to manage the content and contexts of HIV/AIDS education.

³ The report uses the term 'many'. It makes no statistical reference.

Another limitation of Anderson and Thorsen's (1988) study is that it does not account for how the pre - service teachers came to know about HIV/AIDS and it does not provide insight into what the pre - service teachers taught in their HIV/AIDS lessons. A deeper investigation of these issues would provide a more detailed account for reflecting on pre - service teachers and HIV/AIDS teacher education programmes. As Denman, Pearson, Davis and Moody (1996: 93) put it, data pertaining to "people's knowledge, beliefs and attitudes related to HIV/AIDS can provide invaluable information for use in planning preventive programmes".

2.5.2 Pre - service teachers' HIV/AIDS coursework

Lovato and Rybar (1995) investigated pre - service health education coursework in California, USA. Their research design included a survey sample which was based on a listing of 76 approved teacher preparation programs. California was one of the few states to have a credentialing requirement that includes health education in teacher preparation institutions. Teacher educators completed the surveys.

Lovato and Rybar's (1995) study described the development and dissemination of HIV/AIDS curriculum materials to teacher educators in California, USA. A primary objective of their project (called Project TEACH) was to develop resources for college faculties who teach the required health education pre - service teacher education course. Their materials included addressing HIV/AIDS prevention. Their results showed that the teacher educators welcomed the materials, while only a small number of teacher educators did not disseminate the materials. Anecdotal evidence showed that many of the teacher educators were not aware of the health education information and materials provided in the TEACH manual.

In addition, Lovato and Rybar (1995) found that a lack of teacher training constitutes a major obstacle to effective implementation of comprehensive school health education since their data revealed that teachers who conduct health instruction in schools had little or no formal preparation due to the lack of pre - service teacher preparation in the health

education discipline. Consequently, these authors confirm that pre - service teacher education plays an important role in ensuring the implementation of comprehensive school health education in the classroom. They propose that health education must be provided for all pre - service teachers, regardless of their subject area expertise.

Furthermore, Lovato and Rybar's (1995) study found that provision and dissemination of model materials for pre - service teacher education provides an acceptable and feasible step toward curricular change in pre - service teacher training in health education. This study proposes the following for HIV/AIDS materials for pre - service teacher education:

- Biomedical aspects of HIV/AIDS have been highlighted (HIV risk reduction, universal precautions for HIV prevention).
- Sexuality as a topic of contestation has been incorporated. Pedagogic implications for HIV/AIDS have been included. Integration of HIV/AIDS with life skills has been fostered (Alcohol use and AIDS transmission).
- Legal issues have been fused in the course (laws relevant to HIV/AIDS education).
- A multi-disciplinary focus has been sought (Available community resources).

In a similar study conducted by the Florida Pediatric HIV Instrument (FPHI) research (2005), the results confirm that we should not forget that foundation phase teachers play an important role in the fight against HIV/AIDS. This study highlights that 75% of HIV positive babies are living at age 5, and with a mean survival rate of 9.4 years. The FPHI postulates that ⁴elementary teachers often deal with HIV/AIDS. They are significant sources of support in the classroom when HIV infection has already occurred.

Many children diagnosed with HIV infection at birth survive well into the school years (Barnhart, Caldwell, Thomas, Mascola, Ortiz, Hsu, Schulte, Parrott, Maldonado, Byers, & the Pediatric Spectrum of Disease Clinical Consortium 1996). Additionally, some school-age children with HIV remain undiagnosed, have no symptoms, and are not

⁴ In the South African schooling context, 'elementary' can be equated with the foundation phase grades.

receiving medical treatment. These authors indicated that elementary teachers need information and support in planning for instruction of children with HIV.

In their search of the literature, the FPHI (2005) found no studies that focused exclusively on the teachers' knowledge and attitudes about HIV among elementary school children. The FPHI surveys of teacher training programs indicate that instruction about HIV/AIDS is often not provided for future elementary teachers (Gingiss and Basen-Engquist, 1994; White & Ballard, 1993). Their review of the college catalogs by the Sexuality Information and Education Council of the United States (SIECUS) concluded that no universities required a sexuality education course for pre - service teachers, and only 14% required all pre - service teachers to take a health education course (Rodriguez, Young, Renfro, Asencio, and Haffner, 1995/96).

2.5.3 Implementing HIV/AIDS pre - service teacher education

Pattman's (1996) HIV/AIDS action research study of pre - service teachers in Zimbabwe attempted to address pre - service teachers not only on a personal level as people at risk of contracting HIV/AIDS, but also on a professional level as prospective HIV/AIDS educators. The sample consisted of 1 200 first, second, and third year pre - service teachers at a Zimbabwean teacher training college. It provided comprehensible evidence of how pre - service teachers' understanding of how human sexuality, gender and culture operate in everyday contexts.

This author found that an understanding of the pre - service teachers' HIV/AIDS knowledge, attitudes, and self - efficacy is key in the construction and presentation of HIV/AIDS courses as it provides the necessary coordinates for teacher educators to navigate their way through the pedagogic complexities of constructing and conducting HIV/AIDS courses in pre - service teacher education in a way that pre - service teachers gain maximum professional and personal proficiency.

He also found that an understanding of who the pre - service teachers are, where they come from, and the like, is important for teacher educators as they plan the contexts for the presentation of HIV/AIDS courses. This finding is evidenced by his data that suggests that “within the cultural context of Zimbabwe, one of the most effective student-centered ways of addressing issues related to AIDS is drama because there is a strong cultural tradition in Zimbabwe of communication through drama”. According to Pattman (1996) drama was effective in transforming the HIV/AIDS learning context as it offered opportunities for subverting, for example, the Zimbabwean male-centered discourses about women violating culture and spreading AIDS.

Furthermore, Pattman (1996) found that the teacher educators’ social, political and cultural position in relation to that of the pre - service teachers is an important variable in the presentation of HIV/AIDS courses to pre - service teachers. This was evident in his awareness of the political and historical status that he carried in the Zimbabwean context. In Pattman’s words,

“having a white European teacher organizing and managing sessions on AIDS for black African students was problematic because of the missionary figure whose message was that blacks ought not to be ‘promiscuous’”.

In the main, Pattman (1996) found that a biomedical approach to HIV/AIDS education is insufficient for pre - service teacher education. He proposed that it should, of necessity:

- Address culturally embedded attitudes.
- Address gender issues.
- Consider the cultural positioning of the presenter in relation to the cultural positioning of the pre - service teachers.
- Be pedagogically orientated.
- Characterize interactive and learner-centered pedagogy.

Benoy, Chifunyise and Mukiibi (2002) evaluated the impact of pre - service teacher HIV/AIDS Education in Zimbabwe. Their study aimed at evaluating the programme to teach HIV/AIDS education in 27 teacher education colleges in Zimbabwe. A questionnaire was administered to a randomly - selected sample of 1,562 third year pre -

service teachers in fifteen teachers' colleges, two technical colleges and two agricultural colleges. Focus group discussions and interviews were held with the pre - service teachers and HIV/AIDS education coordinators in eight teacher education colleges. Their specific survey objectives sought to find out:

- Pre - service teachers' knowledge of incidences of HIV/AIDS
- Pre - service teachers' knowledge of transmission, symptoms and prevention of STD/HIV/AIDS
- Pre - service teachers' knowledge of the relationship between STDs and HIV/AIDS
- Pre - service teachers' attitudes towards people with HIV/AIDS
- Pre - service teachers' attitudes towards the prevention of STD/ HIV/ AIDS
- if the pre - service teachers wanted more information on STD/ HIV/ AIDS.

With regard to the pre - service teachers' knowledge of HIV/AIDS, Benoy et al. (1999) found that the increase in pre - service teachers' knowledge about STDs and HIV/AIDS was small, and even this change in knowledge level could not necessarily be attributed to the course on HIV/AIDS in the teacher education programme.

In terms of the integrity of the HIV/AIDS course, these authors found that when the teacher educators and pre - service teachers were under pressure from examinations, they stopped attending the HIV/AIDS course, since it was not an exam course. Benoy et al. (1999) found that not much time and effort was spent on developing HIV/AIDS teaching and learning materials. Subsequently, these authors suggest that the course should be developed into an examinable subject so that the pre - service teachers and the lecturers will take it seriously.

Benoy et al. (1999) propose that the colleges should provide updated HIV/AIDS curriculum materials which specifically address girls' decision-making and negotiation skills and child rights issues should be developed with the participation of the pre -

service teachers so that it can contribute towards assessing the pre - service teachers' HIV/AIDS teaching practice.

With regard to the pre - service teachers' attitudes towards people with HIV/AIDS, these authors found that the course did not succeed in developing positive attitudes towards people living with HIV/AIDS. Although some of the pre - service teachers were willing to associate with, and assist colleagues living with HIV/AIDS, the majority had negative attitudes.

As for their pre - service teachers' self - efficacy with regard to reducing risk of HIV/AIDS infection, Benoy et al. (1999) found that the HIV/AIDS pre - service teacher education course succeeded in making the pre - service teachers aware that methods of transmitting and preventing HIV/AIDS are within their control. The pre - service teachers in Benoy et al.'s (1999) sample called for condom distribution to be combined with sound moral messages and the strengthening of life skills among young people, especially among female pre - service teachers. Their participants felt that females needed to develop negotiation skills and assertiveness in their relationships and that the gender dimension of HIV/AIDS needed to be taken into consideration in all interventions.

According to Benoy et al. (1999) the course succeeded in developing the pre - service teachers' confidence to discuss sexuality issues and to teach about reproductive health issues without feeling embarrassed, but gender differences remained. These authors found that the course did not succeed in creating awareness among pre - service teachers on the importance of safeguarding the rights of children. They propose that the teacher educators should design deliberate plans and programs to address issues of self - efficacy like child abuse, especially child sexual abuse.

2.5.4 Pre - service teachers' HIV/AIDS knowledge

Mwamwenda and Jadezweni (2000: 51) investigated the level of HIV/AIDS knowledge of third-year pre - service teachers at the University of Transkei. The mean age of the participants was 24.7 years.

Findings from Mwamwenda and Jadezweni's (2000: 51) questionnaire, which aimed to establish whether participants were aware of the various human behaviours associated with HIV/AIDS, state that a statistically significant number of participants thought there is a cure for AIDS (no statistics were provided in this research report). Further lack of HIV/AIDS awareness in their sample was shown when their participants indicated that the number of HIV/AIDS patients in South Africa is not on the increase. The majority of Mwamwenda and Jadezweni's (2000: 51) participants indicated a lack of awareness with regard to whether shaking hands with an AIDS patient can lead to contracting AIDS.

However, the results of Mwamwenda and Jadezweni's (2000: 51) study suggests that the number of participants who showed awareness for eleven of the fifteen questions in the questionnaire probe was significantly higher than those who lacked such awareness. Mwamwenda and Jadezweni's study (2000: 51) therefore suggest that the majority of pre - service teachers had an adequate level of AIDS awareness.

In a similar study, Uwalaka and Matsuo (1999) collected data from a sample of 505 undergraduate students at the University of Nigeria. Pre - service teachers from the Faculty of Education were amongst their participants, together with undergraduate students from the Faculty of Biological Sciences, Social Sciences, and Physical Sciences. The participants were chosen through a stratified random method. The sample consisted of 246 males (49.1%) and 255 females (50.9%), with a mean age 23.47 and a standard deviation 3.84.

Uwalaka and Matsuo (1999) administered a questionnaire, which consisted of multiple yes/no and Likert - type questions, focusing on knowledge, attitudes, beliefs about susceptibility to AIDS, confidence in sexual practice (self - efficacy), demographic characteristics, and some other items which asked a subject's sexual behavioral change.

Uwalaka and Matsuo's (1999) study showed that their sample of undergraduate students reported positive attitudes towards AIDS patients. Several studies reviewed by Uwalaka and Matsuo (1999) also found high levels of empathy, tolerance, acceptance, and positive

attitudes towards AIDS or persons with AIDS (Serovich and Greene, 1997; Villarruel, Jemmolt, Howard, Taylor, and Bush, 1998). However, other studies reviewed by Uwalaka and Matsuo (1999) showed neutral, unfavourable, or unsympathetic attitudes towards AIDS or those persons with AIDS (Carducci, Frasca, Grasso, Terzi, and Avio, 1995; Konde - Lule, Berkley, and Downing, 1989).

Although Uwalaka and Matsuo's (1999) sample of undergraduate students showed a relatively high level of HIV/AIDS knowledge, they did not demonstrate a perfect knowledge about AIDS transmission. Similar findings have been reported by other studies in the past decade (Al - Owaish, Moussa, Anwar, Al - Shoumer, and Sharma, 1999), "which calls for attention to provide accurate knowledge to undergraduate students" (Uwalaka and Matsuo, 1999:16). For this reason, Uwalaka and Matsuo (1999) propose that HIV/AIDS education should be incorporated as one of the compulsory general study courses for all undergraduate students in Nigeria.

Very little research has been conducted with regard to South African pre - service teachers. If one considers that pre - service teachers are higher education students, I will review studies conducted with South African higher education students. These studies show that South African higher education students are generally knowledgeable about the causes and modes of transmission of HIV/AIDS (Kelly 2001: 19, Marcus 2001: 3-4).

However, Levine and Ross (2002), who investigated the HIV/AIDS knowledge and attitudes of undergraduate students at the University of Cape Town, found that although students had knowledge of the sexual transmission of AIDS, they did not report knowledge of transmission. Interestingly, these undergraduate students defined safe sex as heterosexual vaginally penetrative sex where a condom is used. Most of them reportedly receive information through the media.

Levine and Ross (2002) found that risk was predominantly associated with uneducated rural black women – a group that was considerably different to the sample of largely middle-class, urban, white youth. These undergraduate students believed that poor people

were spreading the disease and that this was due to lack of 'education'. In addition, they believed that their education and class afforded them safety. Women were believed to be most at risk for biological reasons, making condom use a male courtesy rather than necessity for self-preservation (Levine and Ross, 2002)

In a similar study at the Rand Afrikaans University (RAU) conducted by Uys, Martin, Ichharam, Alexander, Els, and Eisen, (2002), a relatively high level of HIV/AIDS knowledge of undergraduate students, particularly with black female students, was found. Uys et al.'s (2002) research sample of 1, 188 participants represented 8,1% of the students at Rand Afrikaans University. Their research designed consisted of a questionnaire, which provided biographical information, and data on knowledge and awareness of HIV/AIDS, sexual behaviour and views about the University's AIDS policy. Immediately after the questionnaire, participants took an HIV test by means of the Orasure collection device. The HIV test and the questionnaire were anonymous and confidential but the two components of the study were linked by means of the same bar code being attached to the students' oral fluid container as well as their survey questionnaire.

Uys et al.'s (2002) study was designed to examine what the differences in the knowledge levels, if any, on the basis of three main demographic variables of race, age and gender. There was no statistically significant relationship between age and levels of knowledge ($p=0.136$). However, black students scored significantly higher on knowledge questions as reflected by a mean score of 11.18, and thus appear to be more knowledgeable of HIV/AIDS ($p=0.018$). Female students were, on average, significantly more knowledgeable about HIV/AIDS than male students ($p<0.0005$) where the mean score for the females was 11.19, compared with a mean score of 10.47 for male participants.

Their study revealed that there were some areas in which higher education students' knowledge is lacking. 8,6% of participants believed that HIV does not cause AIDS. 6,4% did not know whether HIV causes AIDS. An alarming 5,4% believed that a person can get HIV from mosquito bites while 8,4% were unsure. 20,3% believed that a person

couldn't get HIV by engaging in oral sex while 16% of participants do not know. 84,7% of their participants believed that people could protect themselves from HIV by using condoms correctly every time they had sex. And condom use on the RAU campus was proposed as extensive, with 74.2% of sexually active students reporting having used a condom with their most recent sexual partner. Uys et al. (2002) assert that compared to other South African studies this is a high rate of condom use.

2.6 Résumé of this chapter

This chapter presented my main theoretical construct, namely, learning issues in teacher education. It explained the three teacher education issues, namely, knowledge of subject matter, knowledge of teaching tasks and the cognitive apprenticeship.

In this chapter I provided a historical overview of models of teacher education. I conducted a brief overview of learning theories. A definition of behaviourist and constructivist learning theories was presented in order to situate how teacher education has been conceptualized.

Empirical studies, that were relevant to my study, are critically presented and analysed in this chapter. The research studies reviewed in this chapter, can be summarized as follows:

- There is a dearth in the literature concerning South African pre - service teachers.
- There is a “lack of congruence between the pre - service teachers’ responses to ‘being taught’ about health education and ‘feeling prepared to teach’” (Anderson and Thorsen, 1998).
- Many teacher educators were not aware of HIV/AIDS information (Lovato and Rybar, 1995).
- A lack of teacher training constitutes a major obstacle to effective implementation of comprehensive school health education (Lovato and Rybar, 1995).

- Teachers who conduct health instruction in schools had little or no formal preparation due to the lack of pre - service teacher preparation (Lovato and Rybar, 1995).
- Provision of model materials for pre - service teacher education is a feasible step toward curricular change in pre - service teacher training in health education (Lovato and Rybar, 1995).
- An understanding of who the pre - service teachers are important for pre - service teacher HIV/AIDS courses (Pattman, 1996).
- Very little time and effort was spent on developing HIV/AIDS teacher education materials (Benoy et al., 1999).
- HIV/AIDS pre - service teacher education course should be developed into an examinable subject so that the pre - service teachers and the lecturers will take it seriously (Benoy et al., 1999).
- The HIV/AIDS course did not succeed in developing pre - service teachers' positive attitudes towards people living with HIV/AIDS (Benoy et al., 1999).
- The HIV/AIDS course succeeded in making the pre - service teachers aware that methods of transmitting and preventing HIV/AIDS are within their control (Benoy et al., 1999).
- The HIV/AIDS course succeeded in developing the pre - service teachers' confidence to discuss sexuality without feeling embarrassed (Benoy et al., 1999).
- The majority of pre - service teachers had an adequate level of AIDS awareness (Mwamwenda and Jadezwi, 2000: 51).

The reflections gained from this brief summary of HIV/AIDS concerns contributed to my choice of research design and methodology for my study.

CHAPTER THREE:

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

This chapter reviews the research design and methodology used to investigate pre - service teachers' HIV/AIDS knowledge, attitudes and self - efficacy and their intentions to teach HIV/AIDS knowledge, attitudes and self - efficacy in their HIV/AIDS teaching tasks.

3.2 Research design and research questions

Given the evidence that HIV/AIDS subject matter knowledge and knowledge of HIV/AIDS teaching tasks is vital in the professional development of pre - service teachers, the main focus of this research was to examine the consistency between pre - service teachers' HIV/AIDS knowledge, attitudes and self - efficacy and their intentions to teach HIV/AIDS knowledge, attitudes and self - efficacy in their forthcoming HIV/AIDS teaching tasks.

My research design was developed in view of gathering data that would best provide an understanding of the following research questions:

1. When responding to the vignette, what percentage of the 68 pre - service teachers spontaneously mentioned, for their HIV/AIDS teaching tasks:
 - a. at least one aspect of knowledge about the transmission of HIV/AIDS?
 - b. at least one aspect of knowledge about HIV preventive sexual behaviour?
 - c. at least one positive attitude towards people with HIV/AIDS?
 - d. at least one aspect concerned with self - efficacy empowerment?
2. From the vignette data, what main types of unprompted HIV/AIDS knowledge responses did the 68 participants mention spontaneously?

3. From the vignette data, what main types of attitudes towards people with HIV/AIDS did these 68 participants mention spontaneously?
4. From the vignette data, what were the main types of self - efficacy spontaneously mentioned by the sample of 68 participants?
5. What unexpected or unanticipated types of responses did the vignette produce?
6. In what ways was the qualitative data response data (generated by the vignette probe) from the sample of 68 participants consistent or inconsistent with other research findings?
7. Did any evidence arise to suggest that the wording of the vignette question might be in need of rephrasing, and if so, in what ways?
8. With regard to the closed-format questionnaire, how did the 68 participants score on the knowledge items?
9. With regard to the closed-format questionnaire, how did the 68 participants score on the attitude items?
10. With regard to the closed-format questionnaire how did the 68 participants score on the self - efficacy items?

My choice of methodology was a combination of quantitative and qualitative enquiry into a particular phenomenon, namely, HIV/AIDS. The quantitative aspect of this research, by means of a comprehensive questionnaire, sought to elicit the pre - service teachers' HIV/AIDS knowledge, attitudes and their perceived self - efficacy. Quantitative research usually involves "studying the preferences, attitudes, practices, concerns or interests of some group of people" (Gay and Airasian, 1999: 34).

The qualitative aspect of this research, by means of an fictional vignette, sought to investigate what HIV/AIDS knowledge, attitudes and self - efficacy the pre - service teachers intended to teach in their forthcoming HIV/AIDS teaching tasks. Qualitative research refers to "any kind of research that produces findings not arrived at by means of statistical procedures or other means of quantification" (Strauss and Corbin, 1990: 17).

Qualitative research assumes a worldview in which "there are multiple realities – that the world is not an objective thing out there but a function of personal interaction and perceptions" (Merriam 1988: 12). Cronbach (1975: 124) cautions that quantitative research is not able to take full account of the many interaction effects that take place in social settings because it ignores effects that may be important, but that are not statistically significant. Consequently, a combination of qualitative and quantitative methodology has provided this study with the best methodology since it was concerned with gaining insight into,

- pre - service teachers' HIV/AIDS knowledge, attitudes and their perceived self – efficacy,
- and their intentions to teach HIV/AIDS knowledge, attitudes and self - efficacy,

that neither qualitative nor quantitative analysis could have provided alone. Strauss and Corbin (1990) and Patton (1990) concurs that it is not necessary to set these two research paradigms in opposition against one another since qualitative and quantitative research can be effectively combined in the same research project.

My research plan included a careful consideration that the data that was required for this study was of a very private nature. With this in mind, the methods of data collection had to be designed in such a way that it would gather credible data in the least obtrusive way. I determined where and from whom I was going to collect data: first year foundation phase pre - service teachers in the Faculty of Education at the Cape Peninsula University of Technology.

Part of my research plan was to determine what the phases of my inquiry would be. Phase one of my data collection was the qualitatively - based fictional vignette which

investigated what HIV/AIDS knowledge, attitudes, and self - efficacy the sample of 68 pre - service teachers intended to teach in their forthcoming HIV/AIDS teaching tasks. But this instrument did not provide insight into the pre - service teachers' own accurate HIV/AIDS knowledge, their own positive attitudes towards people with HIV/AIDS and their perceived self - efficacy with regard to reducing their own risk of HIV/AIDS infection.

I determined that I would require an additional probe to elicit information about the pre - service teachers' own HIV/AIDS knowledge, attitudes and their perceived self - efficacy. Phase two of the data collection was by means of a quantitatively - based questionnaire which was used to determine this.

My research plan included making adequate provision for all data collection and recording modes. My quantitatively - based questionnaire and my qualitatively - based vignette, were both pencil - and - paper probes. I carefully provided for the logistics of data collection, including scheduling and budgeting. But above all, I was very aware of the techniques that I planned to use to determine trustworthiness.

3.3 SITE AND SAMPLE

3.3.1 Site

As mentioned previously, my study was conducted in the Faculty of Education at the Cape Peninsula University of Technology at the Mowbray campus.

In 2003, when I collected the data, this site was known as the Cape Technikon, Faculty of Education, Mowbray Campus, which had been established in 2000. It was borne out of an amalgamation of twelve former Colleges of Education in the Western Cape. The Cape Technikon's Faculty of Education had two campuses, one in Mowbray, and the other in Wellington.

The incorporation of the Colleges of Education into Higher Education, which began by mid-1998, was aimed at addressing the poor quality of education in South Africa. Asmal

(1999) claimed that the incorporation of the Colleges of Education into higher education provides the institutional basis for the development of a new teacher education system. In the words of Asmal (1999:1) the amalgamation of colleges into higher education " will enhance and strengthen the subject knowledge of teachers through building on the specialization strengths of universities and technikons".

In 2005, as I completed this study, the Cape Technikon and the Peninsula Technikon merged to form what is now the Cape Peninsula University of Technology. As a result, my study was conducted in the Faculty of Education at the Cape Peninsula University of Technology, on Mowbray Campus.

3.3.1.1 Selection of site

The Cape Peninsula University of Technology's Faculty of Education's was selected as the site for my study as it is the location of my employment. The selection of my own place of work, where I am a ⁵teacher educator in the undergraduate and postgraduate programmes, provided me with a very convenient location in terms of time constraints and accessibility for data collection.

Tangentially, having my own workplace as a setting for gaining a deeper understanding of a particular phenomena, has informed my own orientation and reflexivity as a teacher educator.

3.3.2 Sample

My research sample consisted of 68 first year ⁶foundation phase pre - service teachers. This sample of 68 pre - service teachers enrolled at the Cape Peninsula University of Technology in 2003 to follow the four - year Bachelor of Education: Foundation Phase course.

⁵ The term 'teacher educator' refers to the lecturers who teach pre - service teachers and in-service teachers in undergraduate and postgraduate courses in faculties of education at universities.

⁶ Foundation phase refers to grades R – 3 in the South African primary schools.

I invited all the first year foundation phase pre - service teachers to participate in my study. Of the 72 first year foundation phase pre - service teachers enrolled for the Bachelor of Education Degree (Foundation Phase) in 2003, 68 first year foundation phase pre - service teachers participated in my study. I subsequently had a representative sample of first year foundation phase pre - service teachers in the Faculty of Education at the Cape Peninsula University of Technology, in Mowbray.

In quantitative inquiry, the dominant sampling strategy is probability sampling, which depends on the selection of a random and representative sample from the larger population (Patton, 1990).

3.3.2.1 Selection of Sample

While there are hundreds of pre - service teachers in the Faculty of Education in different year groups and in the different teacher education courses at the Cape Peninsula University of Technology, I decided to focus on the first year foundation phase pre - service teachers for two reasons:

1. I am a lecturer in the Foundation Phase Programme in this faculty, so these pre - service teachers provided me with a captive audience. Any findings obtained from my study would therefore inform my own practice.
2. First year pre - service teachers are a unique group as they bring with them a scheme of their own HIV/AIDS knowledge, attitudes and perceived self - efficacy that has not yet been shaped by any higher education, as would have been the case with other year groups. An understanding of their responses has provided insight for making recommendations for their four-year teacher education, vis-à-vis HIV/AIDS.

3.3.2.2 Gender profile of sample

Within this sample of 68 pre - service teachers, four percent were male and ninety - six percent were female. This kind of gender distribution in a foundation phase pre - service

teacher cohort or even in an in-service foundation phase teacher cohort is not unusual as foundation phase teaching has traditionally been associated with female participants and few, if any, male involvement. In fact, the presence of a four percent male population in this foundation phase pre - service cohort is high in comparison to a male intake of foundation phase pre - service teachers in previous years in this faculty, and probably in other universities.

3.3.2.3 Age profile of sample

51% of my sample of 68 pre - service teachers was between the ages 18-19 years. Developmentally speaking, these were the pre - service teachers who were still in their 'teenage' years, most of whom came into the Bachelor of Education course, straight from high school.

49% of my sample of 68 pre - service teachers was between the ages 20 to 37 years. This sub - sample of pre - service teachers had been in other fields of study, various workplaces, and the like, prior to their entry into the four- year Bachelor of Education (Foundation Phase) course.

3.4 Instrumentation, data collection and analysis

The first probe that I used in my data collection process was my fictional vignette. Thereafter, I administered the comprehensive questionnaire (CQ). These two sources of data provided me with a comprehensive understanding of pre - service teachers' HIV/AIDS knowledge, attitudes and their perceived self - efficacy, and their intentions to teach HIV/AIDS knowledge, attitudes and self - efficacy in their forthcoming teaching tasks.

3.4.1 Fictional vignette

Since I was trying to elicit information that pertains to how the participants respond to the challenge of teaching HIV/AIDS, in terms of the content that they select for their HIV/AIDS teaching tasks, I decided to use an fictional vignette probe (Appendix A).

Some studies (Rahman, 1996) have concluded that responses to vignettes will reflect how individuals actually respond in reality.

Finch (1987:105) describes vignettes as short stories about hypothetical characters in specified circumstances, to whose situation the participant is invited to respond and Hazel (1995:2) describes vignettes as concrete examples of people and their behaviours on which participants can offer comment or opinion.

3.4.1.1 Design of vignette

I constructed a short story about a hypothetical grade three character in specified HIV/AIDS circumstances. Using the character's HIV/AIDS circumstances, the participants were asked to respond to one vignette item that elicited responses to HIV/AIDS teaching tasks (Appendix A).

The design of my vignette story was based on the opinion of Neff (1979) who proposed that vignette stories must appear plausible and real to participants, and it must be consistent and not too complex. And since Finch (1987) and Hughes (1998) caution that vignette stories should reflect 'mundane' occurrences as opposed to stories that depict eccentric characters and disastrous events, my vignette story consistently dealt with a grade 3 learner who has been affected by HIV/AIDS. The events in my vignette story appeared likely and the detail, about the grade 3 learner in the story, was not too complex.

Vignettes need to contain sufficient context for respondents to have an understanding about the situation being depicted (Finch, 1987). Since I required the participants to respond to the challenge of teaching HIV/AIDS, I provided a specific classroom context in my story, alongside a broad school context. My participants are foundation phase pre-service teachers. So I calculatingly selected a ⁷grade three context for my vignette story.

⁷ Grade three is a foundation phase school year in the primary school.

3.4.1.2 Selection of vignette items

I decided to use one open-ended question in my vignette because I required comprehensive replies from my 68 participants. According to Bradburn (1983), open-ended questions “produce fuller and deeper replies” and according to Eisner (1991: 36) responses to open-ended questions are “descriptive, incorporating expressive language and the presence of voice in the text”.

In qualitative research, participants are usually asked to respond to a particular situation in the vignette, by stating what they would do Finch (1987:113). My open-ended vignette item attempted to investigate what HIV/AIDS teaching content the pre-service teachers intended to select for their HIV/AIDS teaching tasks.

3.4.1.3 Format of the vignette

Time needed for the completion of the vignette items was taken into consideration as I decided which format the vignette probe should take. I decided on a pencil and paper format. Pencil and paper probes attempt to probe understanding through presenting practical situations in a written descriptive format.

The vignette story was presented on the first page of the instrument. The vignette story was compiled in 196 words, set out in three paragraphs. Clear instructions on how to complete the probe were provided on the cover page.

The open-ended item was presented on page two of the vignette instrument. I formatted the instrument, using size 12 font, and single spacing. Provision was made for participants to write their responses on page two of the instrument, directly underneath the item.

3.4.1.4 Administration of vignette

The qualitatively-based fictional vignette probe was administered to the pre-service teachers during my 90-minute lecture time as allocated on their timetable. This timeslot

was mutually agreed upon with the participants. I conducted the handing out, explanation and collection of the completed fictional vignette probes.

3.4.1.5 Capture of the vignette data

Each completed vignette instrument was coded using numbers one to sixty eight. I recorded the 68 written vignette responses in Microsoft word for the purposes of facilitating quick editing during the analysis process. This presented me with my raw data in electronic form, which was ready for analysis.

3.4.1.6 Analysis of the vignette data

Bogdan and Biklen (1982: 145) define qualitative data analysis as "working with data, organizing it, breaking it into manageable units, synthesizing it, searching for patterns, discovering what is important and what is to be learned, and deciding what you will tell others".

I categorized my sample's written vignette responses according to similar issues of HIV/AIDS that they spontaneously mentioned. These categories were developed and the supporting statement of the participants were captured from the Microsoft word raw data file into a data analysis file by simply 'cutting and pasting' the participants' responses. Vignettes have primarily been used in quantitative surveys but more recently they have been used in qualitative studies (Hughes: 1998: 384).

The next stage of analysis involved re-examining the categories so that I could determine how they are linked. This data analysis process is sometimes called "axial coding" (Strauss and Corbin, 1990: 6). The purpose of coding was to describe the pre - service teachers' responses to the challenge of selecting HIV/AIDS content for their HIV/AIDS teaching tasks.

I compared and combined categories in new ways as I assembled the big picture (Strauss and Corbin, 1990) of the pre - service teachers' responses to the challenge of selecting HIV/AIDS subject matter for their HIV/AIDS teaching tasks. Thereafter, I quantified the

qualitative responses by calculating the number of responses in each category in order to obtain a comprehensive illustration of the discernable trends in the participants' pattern of responses to teaching about specific HIV/AIDS teaching content.

3.4.2 Comprehensive questionnaire

The quantitatively - based comprehensive questionnaire probe was used to gather data that would provide information about the pre - service teachers' HIV/AIDS knowledge, HIV/AIDS attitudes and their perceived HIV/AIDS self - efficacy. These three outcome variables, namely,

- HIV/AIDS knowledge,
- HIV/AIDS attitudes
- and HIV/AIDS self - efficacy,

were selected from the pre - service teachers' spontaneous responses in my qualitative vignette findings.

3.4.2.1 Design of comprehensive questionnaire

The findings generated from the qualitatively - based vignette probe determined the design of the quantitatively - based comprehensive questionnaire (CQ). The CQ was used to measure the three outcome variables namely HIV/AIDS knowledge, HIV/AIDS attitudes and HIV/AIDS self - efficacy that the participants mentioned in the qualitatively - based vignette probe.

The comprehensive questionnaire took the form of 12 closed - format items with fixed response options. According to Galfo (1975), questionnaires are data-gathering probes used to obtain factual data, opinions and attitudes in such a way that the participants and the data - gatherer do not need to come into contact with each other.

Macmillan and Schumacher (2001) claim that questionnaires encompass a variety of probes in which the participants respond to by writing or by marking on responses that are provided. As I considered my time constraint of administering the questionnaire

probe in 90 minutes, the closed - format design was most economical in terms of ease and speed of answering. In addition, closed questions:

- are easier to code and process,
- are less expensive to process,
- make scoring more objective,
- and increase the chances that each item has the same meaning for all participants (Backstrom and Hursh-César, 1981).

3.4.2.2 Selection of questionnaire items

I selected 12 closed - format items from a comprehensive questionnaire design by Mitchell (1994). She developed the comprehensive questionnaire probe over a period of three months with technical support offered by questionnaire practitioners (Oppenheim, 1966; Wolf, 1988; Sudman and Bradburn, 1982; Backstrom and Hursh-César, 1981; Belson, 1981; Henerson, 1978; Orlich, 1978; Youngman, 1978; and Babbie, 1973).

The majority of the items in my quantitatively - based questionnaire were objective items. Most of the items were the true - false type, and a minority were of multiple - choice type. Ebel (1979: 78) says that true - false type items can be answered by even the slower participants at a rate of two per minute. Table 3.1 shows the response categories for the respective outcome variables in my 12 questionnaire items:

Table 3.1: Questionnaire outcome variables, response categories and number of items

Outcome variable		Number of items	Fixed response category
Knowledge of HIV/AIDS	Knowledge of transmission	3	True or false
	Knowledge of sexual preventive behaviours	3	
Attitudes towards people with HIV/AIDS		3	Strongly agree, agree, strongly disagree, disagree
Perceived self - efficacy		3	Very uncertain, uncertain, very certain, certain

I included a fixed response choice “do not know” and “not sure”, respectively, in the fixed responses for my knowledge items and attitude items in order to discourage guessing.

In terms of my three outcome variables the assembly of items comprised the following:

1. Knowledge items stemmed directly from medical texts.
2. Attitude items with respect to participants’ attitudes towards people with HIV were from items developed by other researchers (Macdonald and Smith 1990) Self - efficacy items had to do with the participants’ perceived competence in reducing their own risk of sexual transmission of HIV.

3.4.2.3 Format of the comprehensive questionnaire

Macmillan and Schumacher (2001) suggest that questionnaires should not be too long, and Berdie and Anderson (1974) claim that questionnaires must look attractive and easy to complete.

Formatting of my questionnaire included the title page, which comprised a heading, and a short introduction designed to be non-threatening, serious, neutral and firm to encourage full, honest and careful participation of the sample of 68 pre - service teachers.

Clear instructions on how to complete each question were provided. The items were spread out and uncluttered. The layout was consistent throughout as was the alignment of items. Adequately spaced response boxes within each section were provided. The compiled questionnaire consisted of 3 pages, printed on single sides only, in order to guarantee clear visual clarity for selecting the particular responses in the appropriate boxes (Appendix B).

3.4.2.4 Administration of comprehensive questionnaire

The quantitatively - based questionnaire probe was administered to the pre- service teachers during my 90 - minute lecture time as allocated on their timetable. This timeslot

was mutually agreed upon with the 68 participants. I conducted the handing out, explanation and collection of the completed comprehensive questionnaire probes.

3.4.2.5 Capture of the comprehensive questionnaire data

The completed 68 comprehensive questionnaires were coded using numbers one to sixty eight.

I was able to capture the participants' responses in electronic form, in Microsoft Excel by allocating a '1' to the first response category, a '2' to the second response category, and so on. Where there were three response categories, I recorded the data using numbers one to three. Similarly, where there were four or five response categories I used numbers one to four and one to five, respectively.

3.4.2.6 Analysis of the questionnaire data

I calculated the number of selected responses in each response category in the comprehensive questionnaire. This quantified data presented information on the discernable trends in the participants' HIV/AIDS knowledge, HIV/AIDS attitudes and their HIV/AIDS self - efficacy.

I converted the number of responses of each response category to percentages. For example, I was able to determine what percentage of participants carried positive attitudes towards people with HIV/AIDS, what percentage of participants deemed themselves competent in reducing their own risk of HIV/AIDS infection and what percentage of participants carried accurate knowledge of the transmission of HIV/AIDS and of HIV/AIDS preventive behaviours.

3.5 Control of validity and reliability

As in all research, consideration must be given to validity and reliability. To increase validity I used multiple data sources.

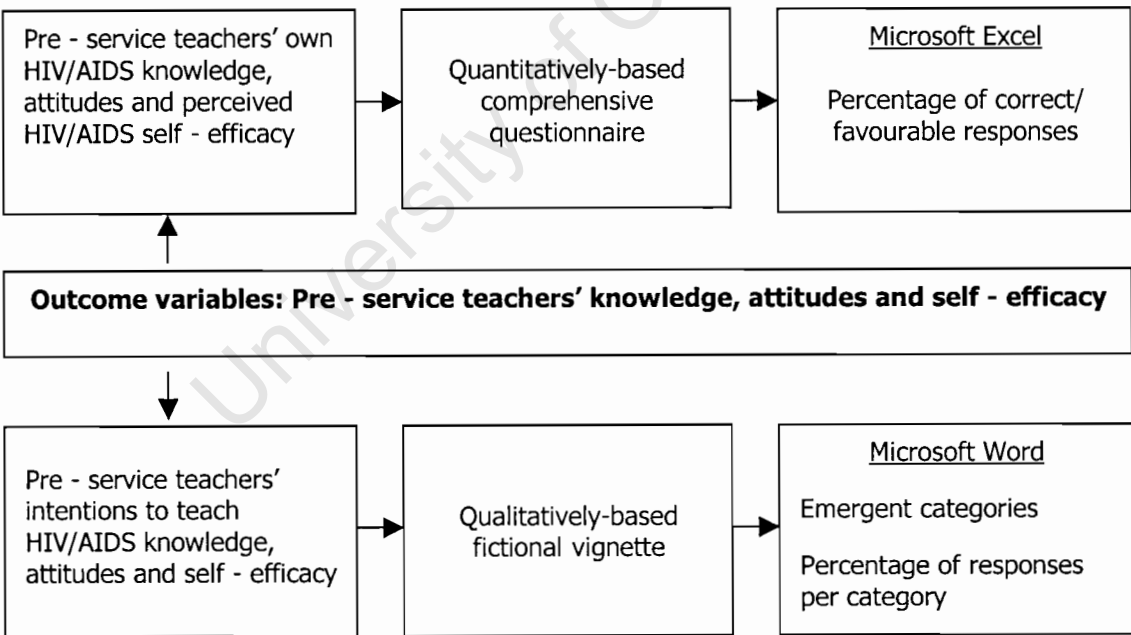
The quantitatively - based comprehensive questionnaire probe provided me with a comprehensively quantified illustration of the pre - service teachers' HIV/AIDS knowledge, their HIV/AIDS attitudes and their perceived HIV/AIDS self - efficacy.

The qualitatively - based vignette probe provided me with a description of the pre - service teachers' responses to the subject matter that they select for their HIV/AIDS teaching tasks and it provided me with a quantified illustration of their pattern of responses to teaching specific HIV/AIDS content.

Lincoln and Guba (1985: 316) claim that "since there can be no validity without reliability, a demonstration of the former is sufficient to establish the latter". Validity was achieved through the consistent use of the three outcome variables, namely HIV/AIDS knowledge, HIV/AIDS attitudes and HIV/AIDS self - efficacy, as anchor - points for the analysis of the qualitatively - based vignette data and quantitatively - based questionnaire data.

The diagrammatic representation below shows how the research design aimed at achieving validity and reliability in my study, using three consistent outcome variables:

Diagrammatic representation of research design to achieve validity and reliability



By collecting and analyzing the data in the manner depicted in this diagram I attempted to reduce the possibility of drawing false or misleading interpretations of the data. Cohen and Manion (1989) and, Parlett and Hamilton (1976) argue that triangulation of data can help validate the data and overcome the risk of “gross partiality” of using only one method of data collection. In addition to sources of data, I conducted comparisons with related literature which also provided a check for consistency or replication of the findings.

3.6 Ethics

Permission to undertake research in the Faculty of education at the Cape Peninsula University of Technology was granted by the Dean. I arranged times, which were convenient for the pre - service teachers to complete my quantitatively - based questionnaire probe and my qualitatively - based vignette probe. On completion of the research, a copy of this thesis was handed to the Foundation Phase Head of Department and the Dean in the Faculty of Education at the Cape Peninsula University of Technology.

3.7 Résumé of this chapter

In this chapter I described the methodology of the study. I defined the focus of the research. A description of the site and sample of this study was provided. My selection of a combination of qualitative and quantitative means of data collection and data analysis was explained. The research issue of validity and reliability was addressed.

CHAPTER FOUR:

DATA ANALYSIS AND INTERPRETATION

4.1 Introduction

This chapter presents the analysis of data obtained from 68 pre - service teachers who completed 68 open-format vignettes comprising one question and 68 closed - format questionnaires comprising 12 items.

The vignette probe sought to elicit information about the participants' responses to the challenge of teaching about HIV/AIDS in their future HIV/AIDS teaching tasks and the questionnaire sought to elicit information about the participants' own HIV/AIDS knowledge, attitudes and their perceived HIV/AIDS self - efficacy.

The research question under investigation in this study was:

To what extent are the pre - service teachers' HIV/AIDS knowledge, attitudes and perceived self - efficacy consistent with the HIV/AIDS knowledge, attitudes and self - efficacy that they intend to teach in their forthcoming HIV/AIDS teaching tasks.

To answer this question, I will give an overview of the results of the sub - questions before I embark on a detailed discussion of the results of this study in chapter five. My sub-questions were:

1. When responding to the vignette, what percentage of the 68 pre - service teachers spontaneously mentioned, for their HIV/AIDS teaching tasks:
 - a) at least one aspect of knowledge about the transmission of HIV/AIDS?
 - b) at least one aspect of knowledge about HIV preventive sexual behaviour?
 - c) at least one positive attitude towards people with HIV/AIDS?
 - d) at least one aspect concerned with self - efficacy empowerment?

2. From the vignette data, what main types of unprompted HIV/AIDS knowledge responses did the 68 participants mention spontaneously?
3. From the vignette data, what main types of attitudes towards people with HIV/AIDS did these 68 participants mention spontaneously?
4. From the vignette data, what were the main types of self - efficacy spontaneously mentioned by the sample of 68 participants?
5. What unexpected or unanticipated types of responses did the vignette produce?
6. In what ways was the qualitative data response data (generated by the vignette probe) from the sample of 68 participants consistent or inconsistent with other research findings?
7. Did any evidence arise to suggest that the wording of the vignette question might be in need of rephrasing, and if so, in what ways?
8. With regard to the closed - format questionnaire, how did the 68 participants score on the knowledge items?
9. With regard to the closed - format questionnaire, how did the 68 participants score on the attitude items?
10. With regard to the closed - format questionnaire how did the 68 participants score on the self - efficacy items?

Each of these research questions is analyzed separately and common understandings which emerge, are discussed in chapter 5.

4.2 From the vignette data, what percentage of the 68 participants spontaneously mentioned, for their forthcoming HIV/AIDS teaching tasks, at least one aspect of knowledge about HIV/AIDS transmission and knowledge of preventive sexual behaviours, at least one positive attitude towards people with HIV/AIDS, and at least one aspect concerned with self - efficacy empowerment?

The 68 pre - service teachers’ written vignette responses were categorized according to similar HIV/AIDS issues. I quantified the categorized qualitative responses by calculating the number of responses in each category to get insight into their pattern of responses to selecting HIV/AIDS subject matter and the supporting written responses of the participants were captured as evidence. Table 4.1 below shows the percentage of participants who spontaneously mentioned particular aspects of HIV/AIDS for their forthcoming HIV/AIDS teaching tasks.

Table 4.1: Summary of HIV/AIDS teaching content spontaneously mentioned (N=68)

HIV/AIDS teaching content		% responses	
Knowledge	Transmission of HIV/AIDS	81%	
	Preventive sexual behaviours	23%	9% of whom will teach
			14% of whom will NOT teach
Attitudes	Positive attitudes towards people with HIV/AIDS	50%	
Self - efficacy	Reducing risk of HIV infection	6%	

4.3 What main types of unprompted HIV/AIDS knowledge responses did the 68 participants mention spontaneously in the vignettes?

Table 4.1 shows that the sample group of 68 participants mentioned two main types of HIV/AIDS knowledge, namely knowledge of the transmission of HIV/AIDS and knowledge of HIV preventive sexual behaviours.

4.3.1 Knowledge of transmission of HIV/AIDS

Table 4.1 shows that in the vignette data 81% of the 68 participants spontaneously mentioned teaching about the transmission of HIV/AIDS in their forthcoming HIV/AIDS teaching tasks. These participants (81%) mainly specified teaching about the transmission of HIV/AIDS through contact with blood. Evidence of the participants’ free responses (81%) that pertains to teaching transmission of HIV/AIDS through contact with blood are as follows:

Respondent 21: *HIV/AIDS is carried on by open cuts and blood-be careful around blood... Not to do anything when someone is bleeding, go straight to teacher or an adult.*

Respondent 2: *I would tell them, if your friend falls at school and cuts open his knee or arm don’t touch the blood with your hands, come and call a teacher rather who will come and help sort it out. If you are walking in the streets and you see a needle lying on the ground, don’t touch it, rather call an adult to come and dispose of it.*

Respondent 10: *It is spread through blood contact with an infected person-it is easy for them to understand and it applies to their age group. Do not touch other people’s blood. Precautionary measures eg. Latex gloves*

Respondent 13: *The facts I will share with the children is that they must not share needles that someone has used. They must not touch anyone’s blood if they have an open cut on them. They should use gloves when cleaning wounds all the time.*

4.3.2 Knowledge of HIV preventive sexual behaviours

Table 4.1 shows that 23% of the participants (N= 68) spontaneously mentioned knowledge of HIV preventive sexual behaviour. Furthermore, table 4.1 shows that there were two distinct types of responses that pertain to teaching HIV preventive sexual behaviour.

The participants either alluded to their tension with teaching HIV preventive sexual behaviours, or the participants mentioned their consensus with teaching about HIV preventive sexual behaviours in their forthcoming HIV/AIDS teaching tasks. Table 4.1 shows that 14% of the sample of 68 participants mentioned that they would not teach HIV preventive sexual behaviours in their forthcoming HIV/AIDS teaching tasks due to learner age-appropriate reasons. Evidence of these participants' tension with teaching about HIV preventive sexual behaviours is found in the following free responses in the vignette data:

Respondent 5: *I would not discuss condoms and sex with the children cause they are too young.*

Respondent 9: *... This is a difficult topic, I personally believe that they are too young to know about sexual intercourse and information concerning that...*

Respondent 37: *I don't think at this stage they need to be taught sex education: (I may be naive here though!)*

Respondent 45: *You can't talk about sex and drugs as they are still too young but they need to know about dangers involved.*

On the contrary, table 4.1 also shows that 9% of the sample of 68 participants mentioned that they were affirmative about transmitting messages of abstinence and safer sex in their impending HIV/AIDS teaching tasks. Evidence of this is found in the following free responses in the vignette data:

Respondent 22: ...Can get it through sexual intercourse. Let them know that sex is not just about playing around. It's something serious and special and we need to be sure about why we are doing it and with who.

Respondent 58: ... so you have to abstain from unsafe sex or abstain till you reach a certain age.

Respondent 60: ...I would speak to them about sex and the consequences but not in too much depth. I would inform them of the precautions one can take to prevent contracting HIV...

Respondent 63: ... and I would briefly touch on sex (to abstain). I would not talk about condoms, only abstinence as children these ages don't need to feel that they have the ability to have sex...

Respondent 14: ... be abstained-not having sex before marriage...

4.4 What main types of attitudes towards people with HIV/AIDS did the 68 participants spontaneously convey?

Table 4.1 shows that 50% of the sample of 68 participants indicated in their free responses in the vignette data that they would teach positive attitudes towards people with HIV/AIDS. The main attitude that these participants (50%) mentioned is non-discrimination. Evidence of this is found in the following free responses:

Respondent 12: HIV can happen to anyone: race, age status, etc...Everyone are equal no matter if you got/have AIDS. Equality/ not to look down on one another- And that it is a reality-need to deal with it.

Respondent 20: Not to treat people with the disease differently, they are still the same person, not to judge children or parents with HIV/AIDS...

Respondent 24: *Not to treat someone who is HIV positive or has AIDS differently...*

Respondent 31: *it is okay to hug and play with someone who is HIV positive (it is safe) – as children will avoid them and be nasty to them.*

Respondent 46: *I think this information is important because children often think that if you have it or a family member has it, it does not mean you can't be their friend...*

4.5 With regard to self - efficacy, what were the main types of self - efficacy that were spontaneously mentioned by the 68 participants?

Table 4.1 shows that 6% of the 68 participants spontaneously mentioned in their free responses in the vignette data that they would teach their learners self - efficacy with regard to reducing risk of HIV infection.

The main types of self - efficacy that the participants (6%) mentioned that they would teach was body image, caring for and protecting the body, preventing child abuse, and negotiation skills. Evidence of this is found in the following free responses:

Respondent 7: *...Body parts – a learner might not know where body parts are...*

Respondent 47: *...Take care of your body. Don't let anything you don't like happen to it...*

Respondent 56: *Explain the importance of the body being yours and the right to say no as well as not accepting treats/rides from strangers.*

Respondent 62: *...I would stress the importance of telling me, or another trusted adult if someone was touching them in a way they didn't want them to...*

4.6 What unexpected types of responses did the vignette probe produce?

Based on a notion gained from a discussion in a lecture conducted with this sample of participants prior to the collection of the data, I expected a large majority of the participants to mention, in their vignette responses, positive attitudes towards people with HIV. However, I was surprised when only half of the participants mentioned teaching about positive attitudes towards people with HIV (see table 4.1 on page 47) in the vignette data since a vast majority of this sample of participants voiced their favour with a holistic approach to HIV/AIDS education aimed at developing the learners' understanding of HIV/AIDS in the context of community, non-discrimination and family care.

I was also astonished that only 6% of the participants mentioned teaching about self - efficacy in the vignette data. I have considered that this may be as a result of the participants' understanding of HIV/AIDS being restricted to their knowledge of HIV/AIDS in terms of blood and sex modes of transmission. One could interpret the large majority of participants' lack of mention of self - efficacy as possibly indicative of their lack of connecting types self - efficacy to HIV/AIDS. Alternatively, they could possibly deem knowledge of HIV/AIDS in terms of blood and sex modes of transmission as more important than HIV/AIDS self - efficacy.

The responses in the vignette data that were probably most unexpected, was the preventive sexual behaviour responses. In the lecture that I conducted with this sample of participants, prior to the collection of this data, there seemed to be controversy around teaching about topics like sex and condom use. So, when 9% of the participants (see table 4.1 on page 51) showed, in the vignette data, that they were affirmative about teaching about these topics, I was surprised because I did not expect any affirmative responses about sex-related topics.

I have also considered that the 14% of participants (see table 4.1 on page 47) who clearly positioned their tension with teaching about these topics for learner age - appropriate

reasons are likely to be representative of the participants who did not mention knowledge of preventive sexual behaviour in their vignette responses.

4.7 In what ways was the qualitative data from the 68 participants (generated by the vignette probe) consistent or inconsistent with other research findings?

The qualitative data generated from the 68 participants is consistent with research findings in Canada and the United States of America.

Firstly, the participants' suggested proficiency to manage some of the content of HIV/AIDS teaching, and secondly, the controversy around teaching about sex-related topics, is consistent with research findings by Anderson and Thorsen (1998) in Canada and Lovato and Rybar (1995) in the United States of America.

Confirming research findings from Canada (Anderson and Thorsen, 1998), the participants in my study seemed to indicate their proficiency and dexterity to manage some of the content and contexts of HIV/AIDS education, particularly the biomedical aspects of HIV/AIDS.

Particularly striking in Anderson and Thorsen's (1998) study was that more pre - service teachers in their study felt prepared to teach HIV/AIDS than they had been taught human sexuality, HIV/AIDS and STD prevention in their course. Bearing in mind that my participants were first year pre - service teachers who had no formal HIV/AIDS pedagogic input in their course at the time of this data collection, my findings are consistent with the findings from Anderson and Thorsen (1998).

The qualitative data generated from the 68 vignette responses showed that sex-related topics was an area of controversy for many of the participants in my study since only 9% mentioned spontaneously that they were affirmative about teaching sex related HIV/AIDS aspects (see table 4.1 on page 47).

This data confirms the recommendations of Lovato and Rybar's (1995) study in the United States of America with regard to HIV/AIDS pre - service teacher education where they proposed that apart from the biomedical aspects of HIV/AIDS, sexuality as a topic of contestation, and the pedagogic implications for HIV/AIDS (handling sexuality in the classroom) have to be included in pre - service teacher education coursework.

4.8 Was the wording of the vignette question in need of rephrasing, and if so, in what ways?

The question in the vignette probe that sought to elicit information about the participants' responses to selecting HIV/AIDS subject matter in their future HIV/AIDS teaching tasks was:

"If you were Amy's teacher, which basic facts about HIV/AIDS would you convey to these Grade 3 learners. Give reasons for your selection of facts!"

On closer perusal of the wording of my question, I have considered that it may have been too ill - defined by my use of the words, 'basic facts'. This consideration is largely based on my unexpected finding of 6% of participants who mentioned self - efficacy. My participants are not likely to regard self - efficacy as a 'basic fact'. As a result, I may have hindered the collection of richer responses that could possibly have rendered a higher percentage response to self - efficacy in the vignette data.

In retrospect, a more well - defined question that would yield richer responses could have been,

"If you were Amy's teacher, which HIV/AIDS messages would you convey to these Grade 3 learners. Give reasons for your selection of messages!"

4.9 With regard to the closed-format questionnaire, how did the 68 participants perform on the knowledge items?

The closed-format questionnaire investigated the participants' knowledge of the transmission of HIV/AIDS and their knowledge of sexual preventive behaviours.

4.9.1 Knowledge of the transmission of HIV/AIDS

Table 4.2 Knowledge of the transmission of HIV/AIDS (N=68)

ITEM NO.	QUESTIONNAIRE ITEM	% responses		
		TRUE	FALSE	NOT SURE
1	HIV can be spread by being bitten by a blood-sucking insect	25	32 *	41
2	The use of protective gloves and a 1 in 10 solution of Jik is a safe and effective way of cleaning up any body fluid spills from an infected person	28 *	25	46
3	The HIV can gain easier entrance into a person's bloodstream through damaged mucous membranes	62 *	1	36

*Indicates correct response

Table 4.2 shows that an alarming two thirds of the sample group of 68 participants do not know that HIV cannot be spread by being bitten by a blood-sucking insect (item 1), and that the use of protective gloves and a 1 in 10 solution of Jik is a safe and effective way of cleaning up any body fluid spills from an infected person (item 2).

Furthermore, table 4.2 shows that an alarming third of the sample group of 68 participants do not know that the HIV can gain easier entrance into a person's bloodstream through damaged mucous membranes (item 3).

Subsequently, table 4.2 shows that this sample group of 68 pre - service teachers carries only partly accurate knowledge of the transmission of HIV/AIDS.

4.9.2 Knowledge of HIV preventive sexual behaviour

Table 4.3: Knowledge of HIV preventive sexual behaviour (N=68)

ITEM NO.	QUESTIONNAIRE ITEM	% responses		
		TRUE	FALSE	NOT SURE
4	If condoms are used to reduce the risk of HIV exposure they need to be worn every time a person has sexual intercourse	100 *	0	0
5	The only certain way of avoiding the sexual transmission of HIV is sexual abstinence	76 *	18	5
6	The only certain way of avoiding the sexual transmission of HIV is a strictly monogamous lifelong relationship when neither partner has ever been exposed to the HIV	85 *	4	10

* Indicates correct response

Table 4.3 shows that 100% of the sample group of 68 participants knew that if condoms are used to reduce the risk of HIV exposure they need to be worn every time a person has sexual intercourse (item 4).

Furthermore, table 4.3 shows that more than two thirds of the sample group of 68 participants know that the only certain way of avoiding the sexual transmission of HIV is sexual abstinence (item 5) and that the only certain way of avoiding the sexual transmission of HIV is a strictly monogamous lifelong relationship when neither partner has ever been exposed to the HIV (item 6).

This indicates that this sample of 68 participants carries highly accurate knowledge of HIV/AIDS preventive sexual behaviours.

4.10 With regard to the closed-format questionnaire, how did the 68 participants score on the attitude items?

Table 4.4: Attitudes towards people with HIV/AIDS (N=68)

ITEM NO.	QUESTIONNAIRE ITEM	% responses				
		Strongly agree	Agree	Not sure	Disagree	Strongly disagree
7	I believe that children with AIDS should be allowed to attend school and mix with other children as normal	25 *	34 *	25	7	7
8	I would stop being friends with a person if I discovered that s/he had AIDS	0	0	7	47 *	46 *
9	I would feel uncomfortable around someone with AIDS	3	8	22	38 *	26 *

*Indicates positive attitudes

Table 4.4 shows that almost two thirds of the sample group of 68 participants hold positive attitudes as regards children with AIDS attending school and mixing with other children as normal (item 7). With regard to attitudes towards their friends who have AIDS, table 4.4 shows that an overwhelming majority of the sample group of 68 participants hold positive attitudes (item 8). Interestingly though, table 4.4 shows that only two thirds of this sample group of 68 participants indicated that they would feel comfortable around some who has AIDS (item 9).

This indicates that this sample group of 68 participants predominantly carries positive attitudes towards people with HIV/AIDS.

4.11 With regard to the closed-format questionnaire, how did the 68 participants score on the self - efficacy items?

Table 4.5: Self - efficacy with regard to reducing risk of HIV infection (N=68)

ITEM NO.	QUESTIONNAIRE ITEM	% responses			
		Very certain	Certain	Very uncertain	Uncertain
10	I would feel competent in negotiating lower-risk sexual activities with a partner who was not agreeable	51 *	26 *	16	5
11	I would be able to initiate a discussion about lower-risk sexual activities before a relationship became sexual	64 *	28 *	8	0
12	I would not be embarrassed to go to a supplier and obtain condoms	37 *	34 *	21	8

*Indicates favourable response

Table 4.5 shows that in each of the items that investigated the participants' self - efficacy with regard to reducing risk of HIV/AIDS infection, more than three quarters of the sample group of 68 participants deemed themselves competent in negotiating lower-risk sexual activities with a partner who was not agreeable and more than three quarters of the sample group of 68 participants deemed themselves competent in initiating a discussion about lower-risk sexual activities before a relationship became sexual.

Table 4.5 also shows that two thirds of the sample group of 68 participants would not be embarrassed to go to a supplier and obtain condoms. However, an alarming one third of this sample group of 68 participants indicated uncertainty regarding their embarrassment to obtain condoms from a supplier. Subsequently, since the sample group of 68 participants did not show 100% self - efficacy with regard to reducing their own risk of HIV infection, particularly on the item that pertains to obtaining condoms from a supplier, their perceived self - efficacy appears ineffectual.

CHAPTER FIVE:

DISCUSSION OF RESULTS AND CONCLUSIONS

5.1 Introduction

This chapter reflects on the coherent patterns and the discernable trends in the results of this study. It connects the findings of the investigation by making theoretically consistent associations between different results and by making linkages with the reported results of other research studies. In this chapter the aims of the study are related to the analysis of the data.

5.2 Aim of the study

The aim of this study was an attempt to address my over-arching research question: To what extent are the pre - service teachers' HIV/AIDS knowledge, attitudes and their HIV/AIDS self - efficacy consistent with the HIV/AIDS knowledge, attitudes and self - efficacy they intend to teach?

First, an answer to this core research question will be discussed from a **synthesis** of the **consistency** in the responses of the participants to the qualitative and quantitative probes, as reported in chapter four in tables 4.1 - 4.5, on pages 47 - 58. Thereafter, I will embark on a detailed discussion of the empirical results of this research, on page 62.

5.3 Overview and synthesis of main findings

The qualitative vignette probe sought to elicit information about the participants' responses to selecting subject matter for their future HIV/AIDS teaching tasks, and the quantitatively-based questionnaire probe sought to elicit information about the participants' own HIV/AIDS knowledge, attitudes and their perceived HIV/AIDS self - efficacy. Table 5.1 uses these last three criteria, namely HIV/AIDS knowledge, HIV/AIDS attitudes and HIV/AIDS self - efficacy as anchor - points for comparing the overall patterns in the 68 participants' responses to the two different forms of probes used to produce the data, in an attempt to determine patterns of coherence in the responses.

Table 5.1 A synthesis of the patterns of responses to (a) the qualitative vignette probe and (b) the quantitatively-based questionnaire items (N=68)

Types of HIV/AIDS teaching content spontaneously mentioned in the 68 vignette answers		(a) Percentages of participants who spontaneously mentioned these types of responses in their vignette answers	Corresponding knowledge, attitudes and self - efficacy items in the quantitative questionnaire	(b) Percentage of the 68 participants who gave correct/ favourable responses in the quantitatively-based questionnaire
Knowledge	Transmission of HIV/AIDS	81%	Item 1	32%
			Item 2	28%
			Item 3	62%
			Average of correct responses	46%
	Preventive sexual behaviours	23% → 9% of whom will teach → 14% of whom will not teach	Item 4	100%
			Item 5	76%
			Average of correct responses	87%
Attitudes	Positive attitudes towards people with HIV/AIDS	50%	Item 7	59%
			Item 8	93%
			Item 9	64%
			Average of favourable responses	72%
Self-efficacy	Confidence in reducing risk of HIV infection	69%	Item 10	77%
			Item 11	92%
			Item 12	71%
			Average of favourable responses	80%

An overview of the overall patterns in the 68 participants' responses to the two different forms of probes is presented. A detailed discussion of these results will follow in the next section of this chapter, on page 62.

In table 5.1 the vignette findings illustrate that the most frequent HIV/AIDS aspects spontaneously mentioned by the participants for their future HIV/AIDS teaching tasks, focused on teaching about the transmission of HIV/AIDS (81%). The qualitative vignette findings presented in chapter four, on page 47, show that the main transmission message that the participants intend to teach concerns the transmission of HIV/AIDS through contact with blood. The corresponding vignette and questionnaire findings in table 5.1, vis-à-vis the transmission of HIV/AIDS, illustrate an inconsistency in the spontaneous responses of the participants to the qualitative vignette and quantitatively - based questionnaire probes. The percentage of participants who spontaneously mentioned in the vignette that they intended to teach transmission of HIV/AIDS (81%) is appreciably greater than the average percentage of correct responses (46%) in the corresponding questionnaire items that pertain to their own knowledge of the transmission of HIV/AIDS. Most of the participants want to teach about the transmission of HIV/AIDS but their knowledge of the transmission of HIV/AIDS is only partly accurate.

In table 5.1 the vignette findings illustrate that one of the least frequent HIV/AIDS aspects spontaneously mentioned by the participants for their future HIV/AIDS teaching tasks concerns knowledge of preventive sexual behaviours (N=9%). The corresponding vignette and questionnaire findings in table 5.1, vis-à-vis knowledge of preventive sexual behaviours, illustrate an inconsistency in the responses of the participants to the qualitative vignette and quantitatively - based questionnaire probes. The evidence for this interpretation is the percentage of participants who spontaneously mentioned in the vignette that they intended to teach knowledge of preventive sexual behaviours (9%). This is appreciably smaller than the average percentage of correct responses in the corresponding questionnaire items that pertain to their own knowledge of HIV/AIDS preventive sexual behaviours (87%). In fact, the questionnaire findings show that the participants' HIV/AIDS strong point seems to be located in their knowledge of HIV/AIDS preventive sexual behaviours (87%) and the qualitative vignette findings presented in chapter four, on page 48, show that the main type of HIV/AIDS knowledge of preventive sexual behaviours that this sample of participants (9%) mentioned in the qualitative vignette findings was sexual abstinence. Also, the learner age-appropriate

reasons that the participants spontaneously mentioned in the qualitative vignette data could explain the apparent discrepancy between the participants' knowledge of preventive sexual behaviours and their intentions to teach HIV/AIDS preventive sexual behaviours.

In table 5.1 the vignette and the corresponding questionnaire findings vis-à-vis positive attitudes towards people with HIV/AIDS illustrate an inconsistency in the responses of the participants to the qualitative vignette and quantitatively - based questionnaire probes. The percentage of participants who spontaneously mentioned in the vignette that they intended to teach positive attitudes towards people with HIV/AIDS (50%) is appreciably smaller than the average percentage of favourable responses in the corresponding questionnaire items that pertain their own attitudes towards people with HIV/AIDS infection (72%). In the qualitative vignette findings the main types of attitudes that the participants mentioned that they intended to teach, as presented in chapter four, on page 49, was non-discrimination towards people with HIV/AIDS.

The vignette findings in table 5.1 illustrate that the least frequent HIV/AIDS aspects that this sample of pre - service teachers spontaneously mentioned that they intend to teach in their future HIV/AIDS teaching tasks concerned self - efficacy with regard to reducing risk of HIV/AIDS infection (6%). Also, the main types of self - efficacy that these participants (N=6%) mentioned in their vignette responses, as presented in chapter four, on page 50, was teaching about body image, caring for and protecting the body, preventing child abuse, and negotiation skills. However, the corresponding vignette and questionnaire findings in table 5.1 vis - à - vis self - efficacy with regard to reducing risk of HIV/AIDS infection illustrate an inconsistency in the responses of the participants to the qualitative vignette and quantitatively - based questionnaire probes. The percentage of participants who spontaneously mentioned in the vignette that they intended to teach self - efficacy with regard to reducing risk of HIV/AIDS infection (6%) is appreciably smaller than the average percentage of favourable responses in the corresponding questionnaire items that pertain to their perceived self - efficacy with regard to reducing their own risk of HIV/AIDS infection (81%). This apparent inconsistency can be explained in terms of

the wording of the vignette item, as explained in chapter four on page 60. This indicates a possible weakness of the content validity of the qualitative instrument in this research study.

From the overview and synthesis, four main findings emerged in this study. The sample of 68 pre - service teachers show:

1. Partly accurate knowledge of transmission of HIV/AIDS but conspicuous intentions to teach transmission of HIV/AIDS.
2. Highly accurate knowledge of HIV preventive sexual behaviours but minuscule intentions to teach HIV/AIDS preventive sexual behaviours.
3. Ineffectual self - efficacy and only slight intentions to teach self - efficacy empowerment.
4. Predominant positive attitudes towards people with HIV/AIDS and intermediate intentions to teach others positive attitudes.

5.4 Discussion of results

The four main findings will be discussed. Theoretically consistent associations will be made with my empirical results. Linkages will be made between the reported results of other research studies and my empirical results.

5.4.1 Partly accurate knowledge of transmission of HIV/AIDS but conspicuous intentions to teach transmission of HIV/AIDS

This sample of 68 pre - service teachers carries only partly accurate knowledge of the transmission of HIV/AIDS. The average percentage of correct responses to the quantitatively - based questionnaire items that investigated the sample of participants' knowledge of the transmission of HIV/AIDS was only 46%.

Mwamwenda and Jadezweni's (2000: 51) study of third year pre - service teachers' knowledge of HIV/AIDS showed that their participants also lacked awareness of the transmission of HIV/AIDS, like whether shaking hands with an AIDS patient can lead to contracting HIV/AIDS. However, the results of Mwamwenda and Jadezweni's (2000: 51)

study showed that the majority of their participants had an adequate level of HIV/AIDS awareness.

Studies conducted on higher education students' HIV/AIDS knowledge (Kelly 2001: 19, Marcus 2001: 3 - 4) show that higher education students are generally knowledgeable about the causes and modes of transmission of HIV/AIDS. Uys et al.'s (2002) study of higher education students revealed that there were some areas in which higher education students' knowledge is lacking. For example, 5,4% of their participants believed that a person can get HIV from mosquito bites while 8,4% were unsure.

Two thirds of my sample group of 68 participants did not know that HIV cannot be spread by being bitten by a blood-sucking insect, and two thirds of the sample group of 68 participants did not know that the use of protective gloves and a 1 in 10 solution of Jik is a safe and effective way of cleaning up any body fluid spills from an infected person. A third of my sample of 68 participants did not know that the HIV can gain easier entrance into a person's bloodstream through damaged mucous membranes.

This implies that these pre - service teachers need to learn this subject matter that they will teach, "because teachers need to know their subjects" (Feiman-Nemser, 2004:11). However, the way in which these pre - service teachers are taught about the transmission of HIV/AIDS should be from the understanding that HIV/AIDS teaching should not be "centered on behaviourist identification of knowledge and skills" (Goodlad, Sober and Sirotnik, 1990). Rather, the pre - service need to gain a conceptual understanding of their acquisition of knowledge of the transmission of HIV/AIDS as "a reasoned educational purpose," (Beyer, 1987: 21).

Within the workplace context of HIV/AIDS pre - service teachers are a unique cohort of higher education students. They teach about HIV/AIDS to young people. Consequently, pre - service teachers cannot carry partly accurate HIV/AIDS subject matter knowledge "because teachers need to know their subjects" (Feiman-Nemser, 2004:11). Most of the pre - service teachers in my study need to develop a deep, conceptual understanding of

the transmission of HIV/AIDS. Their teacher education coursework, should, of necessity provide this understanding. Fosnot (1996:10) propose that the focus of subject matter knowledge in the constructivist model of teacher education is "concept development and deep understanding" of the subject matter.

In terms of developing the pre - service teachers' understanding of HIV/AIDS transmission, a constructivist model will best provide this. This will equip the pre - service teachers with accurate subject matter knowledge in order to "make decisions and construct responsive curriculum throughout their professional lifespan (Cochran-Smith, 2004: 2).

Closer perusal of table 5.1 reveals an inconsistency in the participants' knowledge of transmission of HIV/AIDS (46,2%) and their intentions to teach transmission of HIV/AIDS (81%). This inconsistency signifies a weak interface between my sample of 68 participants' HIV/AIDS subject matter knowledge regarding the transmission of HIV/AIDS and their future HIV/AIDS teaching tasks. This is evident in the appreciably large percentage (81%) of participants who conveyed intentions to teach their inaccurate knowledge of the transmission of HIV/AIDS. This, in turn, holds potentially devastating implications for the pre - service teachers in their personal capacities as individuals at risk of HIV/AIDS infection, and also in their professional capacities as messengers of life - saving HIV/AIDS information.

5.4.2 Highly accurate knowledge of HIV preventive sexual behaviours but minuscule intentions to teach HIV/AIDS preventive sexual behaviours

The questionnaire findings in table 5.1 show that my sample of 68 participants' HIV/AIDS strong point seems to be located in their knowledge of HIV/AIDS preventive sexual behaviours. All the participants responded correctly to one of the three questionnaire items (item 4) that investigated their knowledge of HIV/AIDS preventive sexual behaviours.

In the Uys et al. (2002) study of 1,188 higher education students, 84,7% of their sample group believed that people could protect themselves from HIV by using condoms

correctly every time they had sex. In comparison to the evidence in my study, the level of knowledge of HIV/AIDS preventive sexual behaviour of the participants in the study by Uys et al. (2002) is low since 100% of my sample of 68 participants knew that if condoms are used to reduce the risk of HIV exposure they need to be worn correctly every time a person has sexual intercourse. However, my sample of participants did not show an average of 100% correct knowledge of HIV/AIDS preventive sexual behaviour. The average percentage of correct responses to the questionnaire items that investigated their knowledge of HIV preventive sexual behaviours was 87%.

Corresponding vignette evidence in table 5.1 shows that 9% of the sample of 68 participants mentioned in the vignette that they were affirmative about transmitting messages of abstinence and safer sex in their impending HIV/AIDS teaching tasks. 14% of the sample of 68 participants spontaneously mentioned in the vignette that they would not teach HIV preventive sexual behaviours in their forthcoming HIV/AIDS teaching tasks. These participants (14%), mentioned learner age - appropriate reasons for why they did not intend to teach HIV preventive sexual behaviours.

In view of findings of a survey by the Community Information, Empowerment and Transparency (CIET Africa: 2005), it is significant that an appreciable percentage (14%) of the sample of 68 participants in my study mentioned learner age appropriate reasons for their lack of intention to teach sexual preventive behaviors. The CIET Africa findings showed that one in three children is having sex at the age of ten, 17 out of 100 children will deliberately spread the virus if they know they are HIV positive, two out of every ten children did not believe that condoms prevented pregnancy and sexually transmitted diseases, and children were becoming sexually active earlier (Naran: 2005).

My findings therefore indicate that many of the participants in my study believe that learners younger than ten years are too young to be taught about the issues that the CIET Africa survey has highlighted. Bayat (cited in Naran: 2005) confirms the CIET Africa findings, "our youth, including young children, are sexually active". The implication for my participants' responses is that they do not have an accurate understanding of

children's sexuality. Consequently, sexuality, as a topic of contestation, has to be incorporated in their HIV/AIDS teacher education course, alongside the biomedical aspects like HIV risk reduction, transmission, and the like (Lovato and Rybar, 1995).

The participants (14%) in my study, who mentioned refraining from teaching about knowledge of HIV/AIDS preventive sexual behaviours, probably concur with Schenker and Nyirenda (2002) who also allude to learner age - appropriate HIV/AIDS subject matter. These authors propose that HIV/AIDS subject matter should be characterized by ways in which children of different ages comprehend the definition, cause, treatment and consequences of HIV/AIDS infection. But in view of the CIET Africa (2005) findings, the learners' sexual realities should probably be used as criteria for determining the model of age - appropriate HIV/AIDS subject matter as opposed to how we think children of different ages comprehend the definition, cause, treatment and consequences of HIV/AIDS infection.

Interestingly though, table 5.1 shows that while a small percentage (9%) of my sample of 68 participants mentioned in the vignette that they were affirmative about teaching HIV/AIDS preventive sexual behaviours in their impending HIV/AIDS teaching tasks, the average percentage of participants (N=87%) who gave correct responses in the corresponding questionnaire items that investigated their knowledge of HIV/AIDS preventive sexual behaviours was appreciably greater.

This evidence suggests that an appreciable percentage of my sample of 68 participants have highly accurate knowledge of HIV preventive sexual behaviours but that these participants seemingly have minuscule intentions to teach HIV/AIDS preventive sexual behaviours, seemingly due to their view that the learners are too young to be taught about sexual preventive behaviours. From this evidence, the interface between my sample of 68 participants' HIV/AIDS knowledge regarding HIV/AIDS preventive sexual behaviour and their intentions to teach HIV/AIDS preventive sexual behaviour is timid.

5.4.3 Ineffectual self - efficacy and only slight intentions to teach self - efficacy empowerment

With regard to HIV/AIDS self - efficacy, the study by Uys et al. (2002) involving 1,188 higher education students showed that condom use was proposed as extensive, with 74% of sexually active students reporting having used a condom with their most recent sexual partner. My questionnaire results in table 5.1 show that the average percentage of favourable responses to my participants' perceived self - efficacy, with regard to reducing their own risk of HIV/AIDS infection, was 81%. This evidence indicates that the sample of 68 participants' perceived self - efficacy with regard to reducing their own risk of HIV/AIDS infection appears promising on one of the three items (item 11) that investigated their perceived self - efficacy. In the main, however, their perceived self - efficacy appears ineffectual since almost a quarter of these 68 participants did not respond favourably on the other two questionnaire items (items 10 and 12) that investigated their perceived self - efficacy with regard to reducing their own risk of HIV/AIDS infection.

According to Schenker and Nyirenda (2002: 7), teachers who are comfortable and confident with their own sexual activities are more successful when discussing important controversial issues relating to HIV/AIDS. These authors add that an effective prevention curriculum should be coupled with the inculcation of problem-solving skills, decision-making skills, communication, refusal and negotiation skills within a safe and open environment. Specific skills, such as conflict management and the ability to successfully refuse sex, need greater attention and inclusion (Schenker and Nyirenda, 2002).

Vignette evidence in table 5.1 shows that 6% of the sample of 68 participants spontaneously mentioned that they would teach their learners self - efficacy with regard to reducing risk of HIV infection. The main types of self - efficacy that this sample of participants (6%) mentioned that they would teach was body image, caring for and protecting the body, preventing child abuse, and negotiation skills. Kaufman et al. (2002)

concur that schools have ample latitude to promote the knowledge, understanding and skills to enable young people to make responsible decisions about their sexual behaviour.

It is significant that an appreciable percentage of my sample of participants in my study did not spontaneously convey that they would teach self - efficacy empowerment. The findings of CIET Africa (2005) showed that 43% of all sexual crimes, committed on children reported to Childline were committed by children under the age of 18, and that children often could not say “no” because the abuser is powerful physically and psychologically (Naran, 2005:6). These findings confirm the necessity of teaching children self - efficacy empowerment. From the corresponding vignette and questionnaire findings that pertain to HIV/AIDS self - efficacy it is worrisome that an appreciable percentage of participants’ perceived self - efficacy is ineffectual and that an appreciable percentage of respondents’ do not intend to teach self - efficacy empowerment. As Govender (cited in Naran, 2005) puts it, “Education on sexuality, HIV/AIDS, creating attitudes of empowerment and developing a transformational mindset were the keys to moving forward”.

An appreciable percentage of participants’ perceived self - efficacy was ineffectual, and an appreciable percentage of respondents’ did not intend to teach self - efficacy empowerment. Nevertheless, it is reassuring that the average percentage of participants who perceived themselves as confident in reducing their own risk of HIV/AIDS infection (87%) was appreciably greater than the percentage of participants (6%) who intended discussing important controversial issues relating to HIV/AIDS. Also, it is promising that the main types of self - efficacy that this sample of participants spontaneously mentioned they would teach about was body image, caring for and protecting the body, preventing child abuse, and negotiation skills, as presented in chapter four, on page 50. Schenker and Nyirenda (2002) concur that teachers are required to teach an HIV/AIDS curriculum that is coupled with the inculcation of problem-solving skills, decision-making skills, communication, refusal and negotiation skills within a safe and open environment.

The findings of Benoy et al. (1999) suggest that it is useful to teach pre - service teacher HIV/AIDS self - efficacy for two reasons. As for the pre - service teachers' self - efficacy with regard to reducing their own risk of HIV/AIDS infection, Benoy et al. (1999) found that the HIV/AIDS pre - service teacher education course succeeded in making the pre - service teachers aware that methods of transmitting and preventing HIV/AIDS are within their control. Secondly, Benoy et al. (1999) found that the HIV/AIDS teacher education course succeeded in developing the pre - service teachers' confidence to discuss sexuality issues and to teach about reproductive health issues without feeling embarrassed. However, these authors caution that the HIV/AIDS teacher education course did not succeed in creating awareness safeguarding the rights of children. These authors propose that the teacher educators should design deliberate plans and programs to address issues of self - efficacy like child abuse, especially child sexual abuse.

5.4.4 Predominant positive attitudes towards people with HIV/AIDS and intermediate intentions to teach about positive attitudes

Coombe (2001) postulates that schools are major sites for the promotion of safe and safer sex messages, but Schenker and Nyeranda (2000) caution that school - based education for HIV/AIDS prevention cannot be taught effectively if teachers' attitudes inhibit learners' learning. Benyon (1985: 158) is consistent with this view: "Behind the act of teaching there are embedded a range of attitudes, motives and emotions".

With regard to my participants' attitudes towards people with HIV/AIDS, the questionnaire findings in table 5.1 show that the average percentage of participants who responded favourably to people with HIV/AIDS was 72%. This finding suggests that more than a quarter of the sample of 68 participants' attitudes towards people with HIV/AIDS are not favourable. Teacher education, consequently, needs to address these unfavourable HIV/AIDS attitudes. With regard to the pre - service teachers' attitudes towards people with HIV/AIDS, Benoy et al. (1999) found, however, that the HIV/AIDS course in Zimbabwe pre - service teacher education did not succeed in developing positive attitudes towards people living with HIV/AIDS and that the majority of the pre - service teachers in their sample had negative attitudes towards people with HIV/AIDS.

The corresponding vignette findings presented in Table 5.1 show that half of my sample group of 68 pre - service teachers spontaneously mentioned their intentions to teach positive attitudes towards people with HIV/AIDS in their future HIV/AIDS teaching tasks. The main attitude that the participants (50%) pointed out in their vignette response was non - discrimination towards people with HIV/AIDS, as presented in chapter four, on page 49.

Schenker and Nyirenda (2002) concur that one of the primary challenges in teaching about HIV/AIDS involves the teachers' ability to openly discuss controversial issues like non-discrimination, with their learners. The pre - service teachers' cognitive apprenticeship is likely to foster the pre - service teachers' ability to discuss issues like HIV/AIDS non-discrimination as they critically reflect on their actual HIV/AIDS teaching tasks in real classroom contexts.

In view of Schenker and Nyirenda's (2002) notion that the development of positive HIV/AIDS attitudes can lead to positive and healthy lifelong self - efficacy, it is disconcerting that only half of the 68 participants appear to have taken up the challenge of openly discussing controversial issues like non-discrimination with their learners, and that more than a quarter of the 68 participants did not, on average, respond with positive attitudes towards people with HIV/AIDS, particularly on the questionnaire item that investigated their attitudes towards HIV/AIDS infected children in schools (item 7). This implies that these pre - service teachers need to be confronted with the challenge of analysing their own HIV/AIDS attitudes within the broader context of HIV/AIDS teaching. This will facilitate the pre - service teachers to construct an understanding that their own HIV/AIDS attitudes are an important variable in teaching positive HIV/AIDS to others. Beyer (1987: 30) proposes that a social commitment to this kind of constructivist teacher education holds a conceptual understanding for pre - service teachers that education is "socially constructed and capable of being challenged and modified".

5.5 Résumé of this chapter

This chapter discussed the coherent patterns and the discernable trends in the results of this study. It connected the findings of the investigation by making theoretically consistent associations between different results and by making linkages with the reported results of other research studies.

From the overview and synthesis of the data, the main findings, can be summarized as follows:

1. The sample of 68 pre - service teachers carry partly accurate knowledge of transmission of HIV/AIDS but they have conspicuous intentions to teach transmission of HIV/AIDS.
2. The sample of 68 pre - service teachers carry highly accurate knowledge of HIV preventive sexual behaviours but they have minuscule intentions to teach HIV/AIDS preventive sexual behaviours.
3. The sample of 68 pre - service teachers carry ineffectual self - efficacy and they have only slight intentions to teach self - efficacy empowerment.
4. The sample of 68 pre - service teachers predominantly carry positive attitudes towards people with HIV/AIDS but they have intermediate intentions to teach others positive HIV/AIDS attitudes.

CHAPTER 6:

CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

This chapter presents the conclusions of this study and tries to highlight principle implications of the findings. The implications are used to make recommendations for HIV/AIDS pre - service teacher education and for future research based on these findings and experiences of the researcher. The limitations of this study, in terms of research methods, are discussed.

6.2 Conclusions

There is preliminary evidence in my study pointing in the direction of the volatility of the implementation of school-based HIV/AIDS curricula. The interface between my 68 participants' HIV/AIDS subject matter knowledge, attitudes and self - efficacy and their forthcoming HIV/AIDS teaching tasks is volatile. The fact is that many of my participants intend to teach about HIV/AIDS aspects that they are often not proficient in, and many of my participants do not intend to teach about key HIV/AIDS aspects that they are competent in.

My sample group of 68 participants' HIV/AIDS subject matter knowledge, particularly their knowledge of the transmission of HIV/AIDS, is only partly accurate (46,%). However, the level of their knowledge of HIV preventive sexual behaviours is high (87%), though not perfectly accurate.

My sample of 68 participants' perceived self - efficacy with regard to reducing their own risk of HIV/AIDS infection was relatively ineffectual (80%).

With regard to the 68 participants' attitudes towards people with HIV/AIDS, the evidence in my study showed that an appreciable percentage of my sample of 68 participants (28%) did not carry positive attitudes towards people with HIV/AIDS.

The most frequent HIV/AIDS aspects spontaneously mentioned by the 68 participants for their future HIV/AIDS teaching activities (81%) was teaching about the transmission of HIV/AIDS.

The main transmission message that my sample of 68 participants intended to teach in their future HIV/AIDS teaching tasks was the transmission of HIV/AIDS through contact with blood.

The least frequent HIV/AIDS aspects that this sample of 68 participants spontaneously mentioned that they intend to teach in their future HIV/AIDS teaching tasks (6%) was self - efficacy with regard to reducing risk of HIV/AIDS infection.

The main types of self - efficacy that the sample of 68 participants (6%) intend to teach in their future HIV/AIDS teaching tasks was body image, caring for and protecting the body, preventing child abuse and negotiation skills.

Another less frequent HIV/AIDS aspects spontaneously mentioned by the 68 participants for their future HIV/AIDS teaching tasks (9%) was knowledge of preventive sexual behaviours, largely due to learner age – appropriate reasons.

The main type of HIV/AIDS knowledge of preventive sexual behaviours that this sample of 68 participants (9%) intend to teach in their future HIV/AIDS teaching tasks was sexual abstinence. This evidence alludes to an indication that teaching about sex was an issue of contestation.

Half of the 68 participants mentioned that they intended to teach positive attitudes towards people with HIV/AIDS (50%).

Non-discrimination towards people with HIV/AIDS was the main attitude that half of the 68 participants (50%) spontaneously mentioned they would teach in their future HIV/AIDS teaching tasks.

6.3 Recommendations

From the conclusions of this study, a few recommendations might be suggested for HIV/AIDS pre - service teacher education, and for future HIV/AIDS research.

Consideration might be given to providing HIV/AIDS education for all pre - service teachers regardless of their phase specialization or subject area expertise since HIV/AIDS pre - service teacher education plays an important role in ensuring the implementation of HIV/AIDS education. Anderson and Thorsen's (1998) study, for example, found that health education in pre - service teacher education was low, and in many cases non-existent, and that there was a lack of congruence between the pre - service teachers' responses to being taught about health education and their feeling prepared to teach about health education.

In an attempt to circumvent the ineffective delivery of school-based HIV/AIDS education, deliberation should be made with regard to the pre - service teachers' positive attitudes towards people with HIV/AIDS since "The 'S' factors - shame, silence and stigma - are among the basic reasons behind continued HIV/AIDS fears leading to denial, blame and discrimination, thereby delaying positive action" (Schenker and Nyirenda, 2002: 4).

HIV/AIDS pre - service teacher education should be characterized by a constructivist model of teacher education which regards pre - service teachers as people who carry their own HIV/AIDS knowledge, HIV/AIDS attitudes and HIV/AIDS self - efficacy. The constructivist model for teacher education places the nature and processes of HIV/AIDS teaching and HIV/AIDS learning within a social framework for pre - service teachers (Beyer, 1987: 30). A central tenet of the constructivist model of HIV/AIDS teacher education focuses on problem-posing education in which " participants reflect on their situation and acquiring the ability to intervene in reality as they become more aware of it (Elbaz, 1988: 46).

The evidence in my study points to the usefulness of the cognitive apprenticeship approach for HIV/AIDS pre - service teacher education as this approach attempts to provide pre - service teachers with the opportunities to develop the dexterity to critically assess and implement school-based HIV/AIDS curricula in an HIV/AIDS context of teaching. The cognitive apprenticeship provides collaborative learning with an in - service teacher/tutor who makes his/her knowledge and thinking visible to the pre - service teacher (Feiman - Nemser, 2004: 24).

In terms of pre - service teachers' HIV/AIDS subject matter knowledge, knowledge of the biomedical aspects of HIV/AIDS, like transmission, should be included in a pre - service HIV/AIDS teacher education course because teachers must know their subject matter. Sexuality as a topic of contestation has to be considered as subject matter knowledge and the pedagogic implications for this, vis-à-vis handling sexuality in the classroom, needs to be taken into account. As Schenker and Nyirenda (2002) put it, "teaching about HIV/AIDS prevention differs from more traditional subject areas".

The evidence in my study informs on the need for a pre - service teacher education course that caters for the development of the pre - service teachers' own HIV/AIDS self - efficacy, which will benefit them professionally and personally so that they will be more comfortable, confident and competent in managing the HIV/AIDS challenge. As Schenker and Nyirenda (2002: 8) put it, " Teachers who are comfortable and confident with their own sexual activities are more successful when discussing issues relating to HIV/AIDS". Benoy et al. (1999) concurred an HIV/AIDS pre - service teacher education course succeeded in developing the pre - service teachers' own self - efficacy with regard to reducing their risk of HIV/AIDS infection.

An HIV/AIDS pre - service teacher education course should be carefully structured in terms of its duration, timetable allocation, assessment, and the like. Benoy et al. (1999) found in their study, that when the teacher educators and pre - service teachers were under pressure from examinations, they stopped attending the HIV/AIDS course, since it was not an examination course. Not much time and effort was spent on developing

HIV/AIDS teaching and learning materials. Consequently, Benoy et al. (1999) caution about the integrity of an HIV/AIDS pre - service teacher education course, by suggesting that it should be developed, amongst others, into an examinable subject so that the pre - service teachers and the lecturers will take it seriously and that sufficient time and effort should be spent on developing HIV/AIDS teaching and learning materials.

6.4 Limitations of this study in terms of research methods

There are a number of possible limitations in this study, in terms of research methods. Firstly, choosing a qualitatively - based fictional vignette limits the understanding of the pre - service teachers' actual teaching about HIV/AIDS since this kind of probe may not accurately reflect "how individuals actually respond in reality" (Hughes: 1998:384). This was because "vignettes are short stories about hypothetical characters in specified circumstances to whose situation the participant is invited to respond" (Finch, 1987: 105).

Observations of the pre - service teachers' actual HIV/AIDS teaching, followed by in-depth interviews, would yield a more accurate report of the pre - service teachers' responses to the challenges of teaching about HIV/AIDS, a propos selecting HIV/AIDS subject matter for their teaching tasks.

Secondly, the wording of my vignette item may have limited the kinds of responses produced by the 68 participants, particularly the attitude and self - efficacy responses. In qualitative research, participants are usually asked to respond to a particular situation by stating what they would do (Finch, 1987:113).

As stated in chapter four, on page 53, my vignette item may have been too ill - defined by my use of the words, 'basic facts' since it is unlikely that my participants would regard self - efficacy or attitudes as basic facts. A more well - defined question that would probably yield more accurate, richer responses could have been,

"If you were Amy's teacher, which HIV/AIDS messages would you convey to these Grade 3 learners. Give reasons for your selection of messages!"

Though these limitations exist, this study has allowed us to take a closer look at the pre - service teachers' responses to HIV/AIDS. It is provided an opportunity to critically consider the kind of HIV/AIDS education given to pre - service teachers in terms of their professional levels and personal needs.

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APPENDIX A: IMAGINARY VIGNETTE PROBE

CODE:.....

Please read the case study and then answer the question in the space provided on page 2.

1. All responses are confidential.
2. Thank you for participating!

READ THE FOLLOWING CASE STUDY CAREFULLY

Fairfield Primary School is situated in the Fish Hoek area. The inhabitants of this area are mainly middle class. The neighbourhood is fairly quiet with many churches and church organisations doing outreach work with the elderly in the area and also with soup kitchens in the surrounding poorer areas. Many of the teachers at Fairfield Primary live in Fish Hoek and are familiar with the community's dynamics of religious events (church bazaars etc), neighbourhood gossip and everyday happenings.

The school has a staff of 25. There are 400 learners at the school. During 2001, one of the Grade 3 learner's father fell seriously ill and consequently died. It was believed that the child's (Amy) father was HIV-positive, a speculation that had been fuelled by his major loss of weight. Speculation about the cause of illness and subsequent death was rife amongst teachers, parents, learners and the Fish Hoek community.

Amy's mother, who has been an active volunteer in the school's daily reading hour programme, is also losing weight and she feels that she is no longer welcome at Fairfield Primary School. In Amy's Grade 3 class, there is a discussion about the healthy foods we eat. The teacher is facilitating the discussion. Amy comments that her mother has to eat healthy food because she is ill.

PLEASE ANSWER THE FOLLOWING QUESTION. DETAILED RESPONSES WILL BE APPRECIATED!

QUESTION:

If you were Amy’s teacher, which basic facts about HIV/ AIDS would you convey to these Grade 3 learners? Provide reasons for your selection of facts.

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APPENDIX B: COMPREHENSIVE QUESTIONNAIRE

CODE:.....

- 1. Please complete this questionnaire by ticking your honest response in the blocks provided for each question in sections A, B and C.**
- 2. All responses are confidential.**
- 3. Thank you for participating!**

University of Cape Town

SECTION A

	True	False	Do not know, Not sure
1. HIV can be spread by being bitten by a blood-sucking insect.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. The use of protective gloves and a 1 in10 solution of Jik is a safe and effective way of cleaning up any body fluid spills from an infected person.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. The HIV can gain easier entrance into a person's bloodstream through damaged mucous membranes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. If condoms are used to reduce the risk of HIV exposure they need to be worn every time a person has sexual intercourse.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. The only certain way of avoiding the sexual transmission of HIV is sexual abstinence.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. The only certain way of avoiding the sexual transmission of HIV is a strictly monogamous lifelong relationship when neither partner has ever been exposed to the HIV.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SECTION B

	Strongly agree	agree	Not sure	disagree	Strongly disagree
7. I believe that children with AIDS should be allowed to attend school and mix with other children as normal.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. I would stop being friends with a person if I discovered that s/he had AIDS.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. I would feel uncomfortable around someone with AIDS.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SECTION C

	Very certain	Certain	Very uncertain	Uncertain
10. I would feel competent in negotiating lower-risk sexual activities with a partner who was not agreeable.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. I would be able to initiate a discussion about lower-risk sexual activities before a relationship became sexual.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. I would not be embarrassed to go to a supplier and obtain condom.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>